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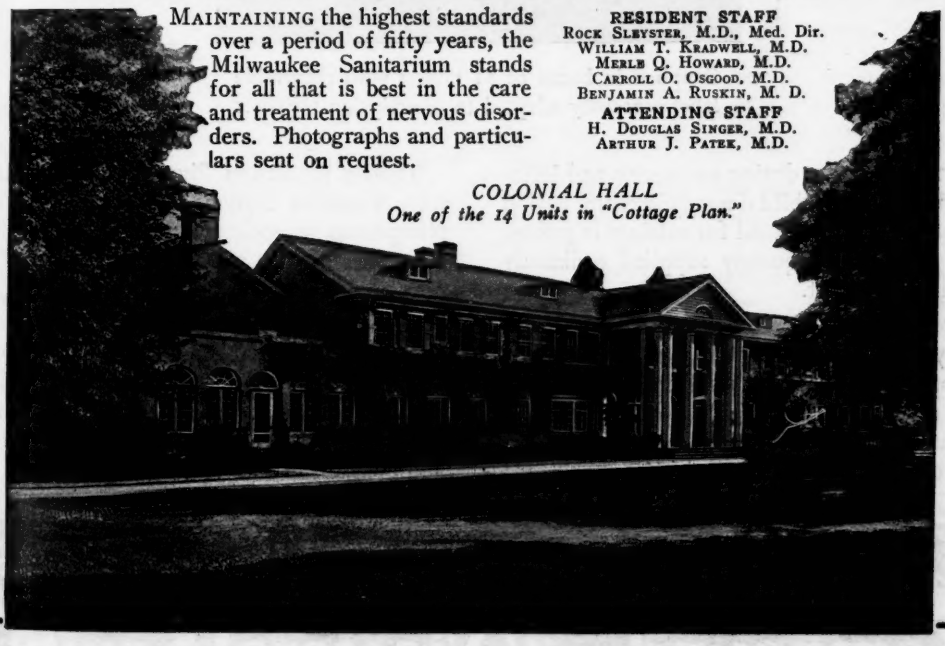

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ILLINOIS MEDICAL JOURNAL

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Editorials

WHY SHOULD AMERICA PICK UP GERMANY'S "OLD MAN OF THE SEA?"

"Sindbad the Sailor" is a classic long since displaced in the up-to-date libraries of modern youth, but the average practicing physician remembers very well the dire tale of the seagoing Sindbad and the Old Man of the Sea.

No lad who shuddered fifty, forty, thirty, even twenty years ago over the dire plight of Sindbad and the wily old man can ever forget his horror over the poor sailor's stupidity in voluntarily assuming a tricky burden that grew daily heavier and daily refused to depart from his Samaritan's shoulders.

Social insurance in its many phases, but especially health insurance, is assuming in those countries that have borne it longest, every trait of poor Sindbad's devastating Old Man of the Sea. The thin, dying creature by the river who wanted only transport across, once safely settled on the youth's back, began to grow to enormous proportions and to torture fiendishly its human steed.

Such is the history of health insurance in those countries,—among others, England, Germany and Austria—where it has become firmly established.

Germany was the first to shoulder the parasite. At that time Germany was in the lead in things medical.

German clinics, German surgeons, German medicines, German laboratory research—there lay Mecca for the ambitious over fifty years ago. About that time social or health insurance made its descent upon the backs of the German people. Where we ask, is the once bright future of German medicine, today?

Behold it, a broken, emasculated thing struggling to travel beneath its politically imposed Old Man of the Sea. An Old Man of the Sea, too who is urging the United States to assume similar burdens of its own blood kin. That such persuasion comes from a political bureaucracy in no wise minimizes the danger. Social insur-

ance was the red ribbon on the glass in which Bismarck, Tammany gone Royalist, threw a drugged sop to the ever overburdened German workingman.

Health in the middle half of the nineteenth century was almost as much of a luxury as diamond necklaces. Fine medical care was kept for princes or for those who won the bounty of the great lords. Bismarck, half fox, half lion and a diplomat worthy of the Vatican, cast about for "bread and circuses" for the Teutonic poor, and found it in promise of free medical and surgical and obstetrical care, for which the beneficiaries if they wished might donate a few assessments. The German, and especially the socialistic German, is always long on the assessment or mutual payment idea, even if it is an assessment in name only.

Now Germany and her English cousins have discovered that economic schemes born in times of plenty are sadly out of joint in the lean years. Take some recent figures from the German front.

Professor Winslow of Yale University is authority for the statement, that for sickness insurance alone the German laborer must set aside something more than eight per cent. of his income (8.5% to be exact) and that the employer for the same purpose adds five per cent. more. Statistics in the United States claim that the average cost of medical care to the citizenry is something like three per cent. of the income. Undoubtedly Germany's other ten and five-tenths per cent. (10.5) is used for paying salaries and buying red tape for the tremendous political bureaucracy needed to handle the German social insurance system . . . the medical Old Man of the Sea. Not only cost but time lost from labor is excessive in Germany. Back in 1913 the German workman was accredited with 9.2 days of loss of labor for illness (with insurance) as against something over six per cent. time loss for the American worker. This ratio is practically the same in the United States today, *but in Germany it has increased to almost* 17%. The total number of days of sick benefits in Germany have increased two and one-third times since 1913; its cost of administration has almost trebled and it has become necessary to add a state subsidy as well as to decrease the time and amount of benefits in a ratio varying from 40 to 70%.

All of which, easily verified by authenticated statistics does not lay any ribbons on the brow of the practicality of health insurance as the German nation bears this burden.

Aside from this economic standpoint to industry, to labor and the state, look at the economic viewpoint of the medical profession. The panel doctor gets the patient after he has had two lay bookings with his soul and his body practically eviscerated on record books of the gossipy laity. The average panel doctor sees from 50 to 200 patients daily at a compensation of something like eight or ten cents per patient. The state furnishes bandages, medicines and the like and the results are a great deal like the bureaucratic nabob who during the recent World war, in spite of the fact that although "America had only 85,000 horses," according to Collier's Weekly, "some imaginative individual placed orders for 945,000 saddles; 1,000,000 horse covers; 1,500,000 halters; 2,000,000 feed bags, and 2,800,000 halters."

That's the sort of waste that happens under any government controlled undertaking when the politicians are at the fore, and there is sugar to be sprinkled about for its constituency. The doctors and the taxpayers in Germany have found that out.

Health insurance, no matter how it is sold to a nation, does not protect, nor conserve, nor improve the health of a nation. But it has been proven to shine like a morning star to guide the greedy politician to a fat pocketbook and easy jobs for himself and his kin, lo, to the fourth generation.

Health insurance by any name is one of those windbag Santa Clauses that may have been practical on Mount Parnassus but have no place in the economics of any sane, rational, self-respecting, self-supporting people. It is an elusive chimera, swallowed gaily by those misguided individuals to whom the "government," "state subsidy" and the like are the pot of gold at the end of the rainbow which made of every dolt a genius and of every sluggard a man of wealth and consequence. "It is natural for man to indulge in the illusions of hope," quoth the great Patrick Henry. For the poor man, and for the burden shifting rich one, it is natural to have faith in such straw mannikins as health and social insurance.

That there should be some way of equalizing burdens of illness between the rich and the indigent without making the medical profession

the buffer state is to be admitted. But that way does not lie in so-called "health insurance" which merely adds more taxes to a nation now so crippled by terrible taxes that industry can scarcely function and the private individual on every side has his own private Old Man of the Sea dragging him down to inefficiency and despair.

The "Medical Annals of the District of Columbia" published recently excerpts from a brochure entitled "Will America Copy Germany's Mistakes," which was written and translated for the Pennsylvania Self-Insurers Association, Finance Building, Philadelphia. For this the author is Gustav Hartz, a seasoned and prominent labor leader in the land of Hitler and Nazis. Excerpts therefrom are as enlightening as they are appalling:

"It is not advisable to give ear to the biased experiences of advocates of social insurance who in many cases draw profits therefrom for there is no institution in the world that is so much extolled and the praise of which is so little justified as social insurance."

"To consider unemployment insurance an achievement of recent years, to call it the 'crown of social insurance' is a mistaken view for every social insurance is unemployment insurance whether the unemployment is due to illness, accident, early incapacity, old age or to being out of work."

"It may easily be proved that social insurance is not only caused by lack of means but even makes of it a social principle, aggravates it, spreads it, makes it permanent."

"Woe to the state which imagines that crises may be alleviated or stopped by the introduction or the existence of a comprehensive system of social insurance. . . Every economic crisis swallows up the best organized social insurance and consumes its funds at both ends—at the end of the diminishing premiums and at the end of the increasing benefits. In the time of her hardest social crisis, social insurance was Germany's greatest inner trouble."

"In Germany the most firmly convinced fanatics on social insurance—such people do still exist and in most cases they fare very well—are even now sure that unemployment insurance 'is not an insurance really.' In 1927 this 'Crown of social politics' was introduced, with fixed premiums and fixed benefits. Three or four years later nothing was left and all that remains of unemployment insurance today is its name. Now the welfare principle is applied for the unemployed: insurance allowance without examining the necessity, namely, with legal rights for six weeks only. Juveniles and working women have no legal claim.

"The period for which benefits are made must of course be limited, as with a subscription of 6½ per cent of their wages not all unemployed can be supported. The greater the number of unemployed, the lower the limit must be set. At first the allowances were made for 26 weeks, now for 6 weeks. As in this crisis, unemployment frequently lasts for years, and most of the unemployed no longer receive any allowance. The unemployed insurance at present scarcely supports one-third of the army of unemployed, while the other part is supported by the welfare and the crisis centers. The same was the case before social politics had their 'crown' put on. These institutions draw their funds from the State revenues."

"It is not in the least different with the sick insurance. The unevenness in the business level, the seasons, holidays, a change of work, failing health and many other things contribute to bring about a noticeable change in morbidity. Since the sick insurance has been in effect, the average number of days of incapacity to work owing to ill-health has risen from 5½ to 28 days, although health in general has considerably improved. In the strict sense of the word the sick insurance is no insurance either. From a technical and mathematical standpoint it is also quite unsettled in view of the moral hazard noted above.

"This is clearly seen when considering that the individual insurance case, whether due to illness or unemployment, can be willfully caused or extended. Where is the borderline between illness and health, between mere indisposition and illness, between dread of getting ill and bluff? And if the insured person is really ill, where is the borderline between ability or disability to work? How can the duration of an illness be fixed?

"Illness is the most incalculable risk in existence.

"Even the doctor is mostly, or at least frequently, unable to diagnose correctly and to distinguish pretenders and hypochondriacs from

really sick people, or rather to tell whether a man is fit to work or not."

"Of all the risks in social insurance only old age, death, and number of dependents can be exactly established. These are, therefore, the only cases in which an unobjectional actuarial basis, and an unquestioned legal claim are possible. Everything else is hazy and uncontrollable."

"Dread of illness obsesses most people, and this has been pressed into a system 'illness made easy,' by which the will to be well is strangled. The doctor is consulted a dozen times where once would be sufficient—the insurance pays. The prescribing of medicine, bandages, etc., is desired. When they have been obtained they lie about until they are no longer fit to be used and must be thrown away—the insurance pays. Besides, it is nice to get something in return for the premiums paid year in and year out. Excessive 'overdoctoring' is the result, and fear of illness shakes the will for recovery—the best aid to health. Pretenders and hypochondriacs are bred and the use of medicine becomes excessive. The advertising of certain remedies and cures created a medicine craze. A few years ago it was ascertained that four times as much money was used for doctors' fees and medicines for 35,000,000 of people in insurance as for 30,000,000 of uninsured. This was stimulated, unthinkingly by a desire to get sick money. An actual run on the sick insurance allowance set in.

"At first sight it seems improbable and paradoxical that a desire to obtain sick money that scarcely amounts to half the sum of wages should arise. It appears impossible that someone should, unless compelled by illness, forfeit his wages to get an allowance of half the amount. Unfortunately life does not run a straight course between health, working ability, working possibilities on one hand, and illness and disability on the other, nor do people's minds and actions.

"In millions of cases, for example, when wages are being decreased, when work is scarce and work hours in consequence shortened, when there are fewer shifts, many holidays, work restrictions at certain seasons, outdoor work in frosty weather, 50 per cent. of the wages is welcome. One objects to the work he is given, another does not feel like working, a third's time is taken up by some family matter for which he would have to take leave of absence and forfeit his pay. In such cases the sick insurance comes in handy. Besides this, there is also deceitful trickery. Fictitious contracts are made, doctors are induced to prescribe medicine, and instead of the medicine, toilet soap and scent, etc., are handed out by the pharmacies.

"How can this possibly be done, some ask. Those who consult doctors are supposed to be ill. That is all very well if the doctors were always able to detect whether the statements of the patients were correct. Often a diagnosis is impossible. He who would like to prove this should go to ten doctors, complain of headache, pain in the limbs, rheumatism. All ten will start a treatment for headache or rheumatism, without discovering that nothing whatever is the matter with the patient.

"Besides that, all doctors are glad to get new patients, for do they not mean their livelihood?

"Medical science has become a cheap article, and doctors have given up conscientious treatment. The genuine patient is neglected, is not given the necessary care.

"The greater the mass consultations, the lower are the doctors' fees. The amounts paid to panel doctors for each single case are deplorable. They are, therefore, compelled to resort to mass practice.

"The sick insurance unrolls the entire problem of the medical man's existence. Mass demand compelled a limitation in the use of medicines. Doctors must not prescribe what they consider good for the patient, they only being allowed to give remedies entered in a book of medical regulations for insurance purposes.

"The insured workman becomes a second class patient."

"The genuine patient is justly indignant to find that the existence of his illness is doubted, and that he who has always paid his premiums regularly and has a right to demand conscientious attendance, is considered a cheat.

"This system, together with the rest of the bureaucratic apparatus, has wedged itself between doctor and patient, completely destroying the patient's confidence in his physician, which greatly retards all recovery."

"In the beginning nobody thought of insuring all workmen, merely needy ones. But soon everybody was 'needy.' Today, with members of families included, two-thirds of the nation are compelled to be insured."

"Liberty and progress are possible only where

the will to get on and to accumulate capital is not hindered, but furthered."

"During the last few years the administration costs amounted to 400 million marks annually. The costs cannot be called too high and cannot possibly be materially reduced.

"However, the whole matter gets another aspect in view of the fact that these expenses are covered by workmen's premiums and are deducted year by year from the money intended for these men's support. In one worker's generation—say from the age of 20 to 60, or 40 years—it means the gigantic sum of 16,000,000,000 marks, which, therefore, is lost from the funds originally intended for sick, unemployment and old age insurances.

"An army of about 70,000 officials is required to handle part of the wages of the workers under compulsory administration, for what else is social insurance?"

"Premiums started on a modest basis. The first were 1½ per cent. for the employee and ¾ per cent. for the employer. Today, the entire premium averages almost one-fifth of the amount of the wages and for minors it is nearly 30 per cent. The involved way in which the contributions are divided between employer and employee is omitted here, as an alteration is pending. It is expected that employer and employee will in future bear equal share, about 10 per cent. each. Is it to be expected that an employer can afford to make an employee a present of 10 per cent. in addition to his wages?"

"The only part of the wages he might be able to save in order to build up a capital is taken from him, thus preventing him having any resources of his own. Whether he wants to or not, he is doomed forever to remain a proletarian. It is social insurance, therefore, that makes needy people, in order to give them after they have become needy, very inadequate support. Social insurance originally was established to help those in distress. Now these are poor of its creation."

TEN CARDINAL PRINCIPLES FOR MEDICAL MEN

At the June meeting of the American Medical Association at Cleveland the House of Delegates went on record in favor of the following set of principles to guide the medical profession in its efforts to meet the problems of medical service under the present menacing conditions:

First: All features of medical service in any method of medical practice should be under the control of the medical profession. No other body or individual is legally or educationally equipped to exercise such control.

Second: No third party must be permitted to come between the patient and his physician in any medical relation. All responsibility for the character of medical service must be borne by the profession.

Third: Patients must have absolute freedom to choose a legally qualified Doctor of Medicine who will serve them from among all those qualified to practice and who are willing to give service.

Fourth: The method of giving the service must retain a permanent, confidential relation between the patient and a "family physician." This relation must be the fundamental and dominating feature of any system.

Fifth: All medical phases of all institutions involved in the medical service should be under professional control, it being understood that hospital service and medical service should be considered separately. These institutions are but expansions of the equipment of the physician. He is the only one whom the laws of all nations recognize as competent to use them in the delivery of service. The medical profession alone can determine the adequacy and character of such institutions. Their value depends on their operation according to medical standards.

Sixth: However, the cost of medical service may be distributed, the immediate cost should be borne by the patient, if able to pay, at the time the service is rendered.

Seventh: Medical service must have no connection with any cash benefits.

Eighth: Any form of medical service should include within its scope all qualified physicians of the locality covered by its operation who wish to give service under the conditions established.

Ninth: Systems for the relief of low income classes should be limited strictly to those below the "comfort level" standard of incomes.

Tenth: There should be no restrictions by non-medical groups on treatment or prescribing unless formulated and enforced by the organized medical profession.

THE 1935 ANNUAL MEETING

The preliminary program and information concerning the 1935 Annual Meeting will appear in the April number of the ILLINIOS MEDICAL JOURNAL. The plans are well under way for a big meeting in Rockford on May 21, 22 and 23.

The Pediatricians will conduct their own meeting on Tuesday Morning, May 21, and their excellent program will be available for publication at an early date. The Secretaries' Conference will begin at 9:00 A. M. Tuesday, May 21, and an excellent program which will appeal to all physicians is being arranged.

The General Opening Meeting will be held at 1:00 P. M. Tuesday, and will be followed by the Oration in Medicine, to be delivered by Dr. James S. McLester, President-elect of the American Medical Association, Birmingham, Alabama. Dr. McLester is one of the outstanding Internists of the South, and will have an interesting paper.

The Oration in Surgery will be delivered by Dr. Martin Nordland of Minneapolis, and his subject will be announced in the preliminary program. Dr. Nordland who is an associate in Surgery at the University of Minnesota, and President of the Minneapolis Surgical Society, is a forceful speaker who can present his subject in a most pleasing manner.

The President's Dinner will be held at the Hotel Faust, Rockford, on Wednesday evening, May 22. The Committee on Arrangements and the special President's Dinner Committee are planning to make this an outstanding feature of the Annual Meeting.

All sessions during the Annual Meeting will be held in the Faust Hotel, and both commercial and scientific exhibits will also be demonstrated there, an ideal arrangement. The Committee on Scientific Exhibits is arranging for some highly interesting exhibits under three general classifications, and hope to have the best exhibit of this nature that has been arranged to this date. Fracture demonstrations will be arranged for the 1935 Meeting, similar to those given last year in Springfield. Under the supervision of Dr. Philip H. Kreuscher, it is proposed to demonstrate the modern treatment of the commor types of fractures, using from 15 to 18 members of the Society who are especially interested in fracture work.

Owing to the fact that a large attendance is expected for the annual meeting, it is advisable for all members planning to attend it, to make their hotel reservations as early as possible. This can be done by writing the Committee on Arrangements at Rockford.

Complete details concerning the meeting will appear in the April ILLINOIS MEDICAL JOURNAL.

THE SPECIAL SESSION OF THE HOUSE OF DELEGATES OF THE AMERICAN MEDICAL ASSOCIATION

The House of Delegates of the American Medical Association held an emergency meeting in Chicago February 15-16, 1935.

This special or emergency meeting was called at the suggestion of the Board of Trustees for the consideration of social and economic policies of the association, as related to pending and proposed legislation, to sickness insurance and to other matters submitted by the Board of Trustees as follows:

QUESTIONS FOR THE HOUSE OF DELEGATES

Dr. Upham also presented six questions suggested for discussion by the House of Delegates, as follows:

1. Shall or shall not the House of Delegates again declare its opposition to all forms of state medicine, including any form of medical treatment provided, conducted, controlled or subsidized by the federal or by any state government, excepting such service as is provided by the Army, Navy or Public Health Service and such as is necessitated by the control of communicable disease or for the treatment of mental disease or of the indigent sick, and excepting also all such other service as may be approved, administered or conducted by local county medical societies and not disapproved by the state medical societies of which they are component parts?

2. What is the attitude of the House of Delegates toward the eleven principles proposed by the Committee on Economic Security as fundamental to any system of sickness insurance to be established by the federal government?

3. Shall or shall not the House of Delegates of the American Medical Association reaffirm its opposition to the principle of federal subsidies to individual states in relationship to the provision of medical service?

4. Will the House of Delegates express its position relative to that provision of the Wagner bill which places the control of medical affairs in the Department of Labor under a non-medical special board?

5. What attitude shall the House of Delegates take relative to the proposed sickness insurance legislation in the individual states as represented by the Epstein bill of the American Association for Social Security?

6. How may the American Medical Association ini-

tiate plans for still further improving the quality of medical service and for obtaining better distribution of medical service for all the people?

Delegates from the respective states engaged freely in the discussion of medical economic problems. It was positively apparent at all times that the medical profession is not ready to yield its position in regard to one hundred per cent. opposition to all forms of social legislation involving schemes for compulsory health insurance and other schemes for general socialization of everything and everybody.

The following unanimous report of the reference committee, special session house of delegates, expresses the sentiments of the delegates present at the meeting:

REPORT OF THE SPECIAL REFERENCE COMMITTEE

Your reference committee, believing that regimentation of the medical profession and lay control of medical practice will be fatal to medical progress and inevitably lower the quality of medical service now available to the American people, condemns unreservedly all propaganda, legislation or political manipulation leading to these ends.

Your reference committee has given careful consideration to the record by the Board of Trustees of the previous actions of this House of Delegates concerning sickness insurance and organized medical care and to the account of the measures taken by the Board of Trustees and the officials of the Association to present this point of view to the government and to the people.

The American Medical Association, embracing in its membership some 100,000 of the physicians of the United States, is by far the largest medical organization in this country. The House of Delegates would point out that the American Medical Association is the only medical organization open to all reputable physicians and established on truly democratic principles, and that this House of Delegates, as constituted, is the only body truly representative of the medical profession.

The House of Delegates commends the Board of Trustees and the officers of the Association for their efforts in presenting correctly, maintaining and promoting the policies and principles, heretofore established by this body.

The primary considerations of the physicians constituting the American Medical Association are the welfare of the people, the preservation of their health and their care in sickness, the advancement of medical science, the improvement of medical care, and the provision of adequate medical service to all the people. These physicians are the only body in the United States qualified by experience and training to guide and suitably control plans for the provision of medical care. The fact that the quality of medical service to the people of the United States today is better than that of any other country in the world is evidence of the extent to which the American medical profession has fulfilled its obligations.

The House of Delegates of the American Medical Association reaffirms its opposition to all forms of compulsory sickness insurance whether administered by the federal government, the governments of the individual states or by any individual industry, community or similar body. It reaffirms, also, its encouragement to local medical organizations to establish plans for the provision of adequate medical service for all of the people, adjusted to present economic conditions, by voluntary budgeting to meet the costs of illness.

The medical profession has given of its utmost to the American people, not only in this but in every previous emergency. It has never required compulsion but has always volunteered its services in anticipation of their need.

The Committee on Economic Security, appointed by the President of the United States, presented in a preliminary report to Congress on January 17 eleven principles which that committee considered fundamental to a proposed plan of compulsory health insurance. The House of Delegates is glad to recognize that some of the fundamental considerations for an adequate, reliable and safe medical service established by the medical profession through years of experience in medical practice are found by the committee to be essential to its own plans.

However, so many inconsistencies and incompatibilities are apparent in the report of the President's Committee on Economic Security thus far presented that many more facts and details are necessary for a proper consideration.

The House of Delegates recognizes the necessity under conditions of emergency for federal aid in meeting basic needs of the indigent; it deprecates, however, any provision whereby federal subsidies for medical services are administered and controlled by a lay bureau. While the desirability of adequate medical service for crippled children and for the preservation of child and maternal health is beyond question, the House of Delegates deplores and protests those sections of the Wagner bill which place in the Children's Bureau of the Department of Labor the responsibility for the administration of funds for these purposes.

The House of Delegates condemns as pernicious that section of the Wagner bill which creates a social insurance board without specification of the character of its personnel to administer functions essentially medical in character and demanding technical knowledge not available to those without medical training.

The so-called Epstein bill, proposed by the American Association for Social Security, now being promoted with propaganda in the individual states, is a vicious, deceptive, dangerous and demoralizing measure. An analysis of this proposed law has been published by the American Medical Association. It introduces such hazardous principles as multiple taxation, inordinate costs, extravagant administration and an inevitable trend toward social and financial bankruptcy.

The committee has studied this matter from a broad standpoint, considering many plans submitted by the

Bureau of Medical Economics as well as those conveyed in resolutions from the floor of the House of Delegates. It reiterates the fact that there is no model plan which is a cure-all for the social ills any more than there is a panacea for the physical ills that affect mankind. There are now more than 150 plans for medical service undergoing study and trial in various communities in the United States. Your Bureau of Medical Economics has studied these plans and is now ready and willing to advise medical societies in the creation and operation of such plans. The plans developed by the Bureau of Medical Economics will serve the people of the community in the prevention of disease, the maintenance of health and with curative care in illness. They must at the same time meet apparent economic factors and protect the public welfare by safeguarding to the medical profession the functions of control of medical standards and the continued advancement of medical educational requirements. They must not destroy that initiative which is vital to the highest type of medical service.

In the establishment of all such plans, county medical societies must be guided by the ten fundamental principles adopted by this House of Delegates at the annual session in June, 1934. The House of Delegates would again emphasize particularly the necessity for separate provision for hospital facilities and the physician's services. Payment for medical service, whether by prepayment plans, instalment purchase or so-called voluntary hospital insurance plans, must hold, as absolutely distinct, remuneration for hospital care on the one hand and the individual, personal, scientific ministrations of the physician on the other.

Your reference committee suggests that the Board of Trustees request the Bureau of Medical Economics to study further the plans now existing and such as may develop, with special reference to the way in which they meet the needs of their communities, to the costs of operation, to the quality of service rendered, to the effects of such service on the medical profession and to the applicability to rural, village, urban and industrial population, and to develop for presentation at the meeting of the American Medical Association in June model skeleton plans adapted to the needs of populations of various types.

DOCTORS SHOULD CONTROL ALL FORMS OF MEDICAL SERVICE

Dr. Charles B. Reed, of Illinois, at the special meeting of the A. M. A. House of Delegates in February, introduced the following resolution which was unanimously adopted:

WHEREAS, In many communities throughout the country various lay organizations are sponsoring the conduct of diagnostic clinics for such conditions as physical handicapped children, infant feeding problems, etc.; and

WHEREAS, The actual clinical work is performed by members of organized medicine; and

WHEREAS, Full credit for the results if favorable is often given to the sponsors instead of to the clinicians; and

WHEREAS, It has been published throughout the country that children with various handicaps are neglected by the medical profession; therefore, be it

Resolved, By the House of Delegates in special session assembled that all clinics, child welfare groups of whatever nature and other social or charitable organizations which have to do with medical problems be regarded as a part and attribute of medical practice; and be it further

Resolved, That the constituent state and county societies should organize, conduct and control all diagnostic and welfare clinics of whatever nature soever which are deemed essential to the conservation of health and for which the medical arm is responsible.

SOCIALIZE MEDICINE—THEN GENERAL SOCIALIZATION WILL BE UNDER WAY

Dr. Wm. H. Mayer, of Pittsburgh, chairman of the committee on Public Relations of the Medical Society of the State of Pennsylvania, has sent the following release to over two thousand industries in that state:

"There are concerted efforts on foot to socialize the practice of medicine. Should these succeed, general socialization will be under way.

"The Columbia Broadcasting System is broadcasting each week, on Monday evening, over sixty-one stations, discussions dealing with socialization of medicine, which are predominantly propaganda in favor of this socializing effort.

"The American Association for Social Security, Inc., Abraham Epstein of New York City, executive secretary, has prepared a proposed health insurance bill for introduction into the 1935 state legislatures.

"This proposed law shall establish a state health insurance bureau and commission and build up a state health insurance fund from three sources: 1.5 per cent. employers' payrolls paid by the employer; 3 per cent. of the wages of employes (deducted by employers and transmitted to the state fund), and 1.5 per cent. of the total payroll of employers appropriated from tax funds.

"Their model bill also proposes to combine cash benefits with medical, hospital and dental care. This means that the employer will pay his large share directly and bear his burden as an already heavy taxpayer.

"The business interests of Europe have already suffered as a result of this scheme, which in England in 1933 cost through parliamentary grants $24,000,000 and in Germany gave clerical employment to 34,300 persons.

"Business men and industrialists should not willingly promote socialization of business and industry in America. If the practice of medicine is socialized, the entering legislative wedge will have been gained.

"Will you not therefore first urge your legislative representatives to discourage the disrupting activities of the 'American Association for Social Security' which is promoting these socialization schemes through active lobbies; second, use your influence with the Columbia Broadcasting Company to prevent the propaganda for the creation of an expensive bureaucracy ultimately destructive of good medical service.

"The Medical Society of the State of Pennsylvania through its Public Relations Committee will be glad to correspond with you further."

EDUCATIONAL COMMITTEE HEALTH RADIO TALKS SHOULD CONFORM TO THE FOLLOWING POLICIES

1. Treatment is not to be discussed over the radio by any of the agents of the Educational Committee of the Illinois State Medical Society.
2. Personal advertising must be avoided.
3. All radio papers are to be submitted to the office being broadcast. No article is to be given over the radio until it has had the approval of the Educational Committee.
4. Radio papers must be read exactly as approved by the Committee. There are to be no changes or additions made when the article is read over the radio.

The Educational Committee of the Illinois State Medical Society wishes to conform with the policies of the House of Delegates of the State Society as well as with those of the House of Delegates of the American Medical Association as stated in the Journal of the Association for June 11, 1927, as follows:

"The House of Delegates concluded that interviews or articles of an educational nature on medical or health subjects, intended for the lay press or lay audiences should give expression to the consensus of opinion of the medical profession rather than to personal views which may be in conflict therewith, and that articles should appear preferably under the auspices of the American Medical Association or one of its component societies or constituent associations.

"—discussions of new discoveries, of proprietary products, and of special notions may well be confined to medical periodicals, which constitute an open forum for determining the actual status of things in dispute."

To succeed in a radio talk the subject must be made to interest the audience. Repeat your subject from time to time.

Avoid long or involved sentences or long words.

MEDICAL PRACTICE FOR SALE

The lucrative practice of the late Dr. W. T. Short of Stonington, Illinois, offers a splendid opportunity for some first-class M. D. who wishes to get busy from the very beginning. Please address Mrs. W. T. Short, Stonington, Illinois.

TREATMENT OF PERFORATED "PEPTIC" ULCERS

Hugh H. Trout, Roanoke, Va. (*Journal A. M. A.*, Jan. 5, 1935), discusses the acute perforations that demand immediate operation. The deductions reached are based largely on personal experience in the treatment of forty-one such cases. This experience has been greatly influenced, however, by numerous visits to other hospitals, conversations with other surgeons, and a careful review of the literature. Of course it is generally conceded, even by the most radical adherents of the nonsurgically inclined of medical men, that surgery offers the best hope of recovery. Therefore the author confines his discussion to surgical intervention in this condition, considered under the following three headings: (1) Drainage after closure of the perforation, (2) advisability of immediate gastro-enterostomy following closure of perforation and (3) treatment of perforations on the posterior wall of the stomach and duodenum associated with hemorrhage, from which he draws the following conclusions: 1. Drainage of the peritoneal cavity should be avoided if possible. 2. Continuous gastric suction through a nasal tube has decreased the indications for an immediate gastro-enterostomy. 3. Partial gastric resection ih the operation of choice in those cases of posterior perforations of the stomach or duodenum which are associated with massive hemorrhage.

SUGGESTIONS ON PREPARING COPY

Writing a Craft and an Art

"It is a craft when practiced for the uses of daily life by persons of ordinary endowments; it is transformed into an art when to excellence of craftmanship is added the formative principle that differentiates an art from a craft.

"It might be supposed that anyone who wished to write would know what he wished to write about. But many merely wish to write. To recommend that such a person choose a subject which he knows well is not so superfluous as it seems."

A Manual for Writers: Manley and Powers

"Accurate use of a large vocabulary of words clear and sharp in their meaning marks the scholarly writer."

The Writing of Medical Papers: Mellish

A medical editor welcomes copy on new discoveries or novel applications of old principles when presented in attractive form. It therefore behooves the writer to limit his subject closely, to take time to condense and polish the text, verify the statistics, illustrations and tabular matter and present his ideas in a form to appeal to the reader.

Medical literature is accumulating at such an enormous rate that it is comparable to the astronomer's theory of the "Expanding Universe." To add to the mass, unless the contribution is novel and well presented, is a liability rather than an asset.

Following the publication of "Observations on Copy" last year there was some improvement in the papers prepared for the annual meeting and the suggestions are revised and repeated at this time in the hope that they may be useful in the preparation of papers for the forthcoming meeting.

Much time, labor and expense on the part of writers, editors, printers and others can be saved by compliance with these suggestions.

Titles of articles should be brief and explicit. Otherwise they cannot be readily located in the Index Medicus and the author loses the advantage of that excellent publicity.

Paper and Style: All copy should be submitted on standard size white paper, 8½x11 inches and *double spaced throughout*. Page to be blank 1½ inch top and left side; inch on bottom and right side. *Copy to be original.* (Author keeps a carbon copy.)

Pages Numbered: All pages including tables, legends and bibliography, to be numbered consecutively. Also all illustrations to be numbered and marked "top" and have author's name on back.

Title, author: Title of paper, author's name and city address should appear in order stated at top of first page; author's street address at end of article.

The contents of paper should be in the best possible style and turned over to the official reporter with the distinct understanding that proof will be submitted to authors for the correction of *typographical errors only*. If changes from copy are desired they will be made at *author's expense.*

Spelling: Spelling as in Stedman's Medical Dictionary is considered standard. He does not recognize such barbarisms as oedema which he calls "variant," nor have we adopted the short form of though, thorough, etc., even if some lexicographers have.

Abbreviations not in dictionaries should not be used except in tables with explanatory footnotes.

Words Often Misspelled

abscess
anemia
anastomosis
anesthesia
benefited
bactericidal
calcareous
carcinoma
caseous
desiccate
diphtheria
dyspnea
edema
esophagus
goiter
hemorrhage
Hippocratic
inflamed
inflammation
inoculation
myxedema
per cent. (2 words with period)
preventive
septicemia
smallpox
syphilis
thorough
though
through
tonsillitis
tryparsamide
x-ray

Numbers under 10 to be spelled out; over 10, use Arabic numerals.

Compound Words: Many medical terms formerly written separately or hyphenated are now run together as in German, which has a certain scientific advantage however cacophonous the sound. Recent editions of both Dorland and Stedman have pharyngomaxillary and sternocleidomastoid which were formerly hyphenated.

Stedman writes all gastro compounds without hyphens. Funk & Wagnall's Standard uses hyphens, indicating that medical practice follows the German style more closely.

Capitalization: No capitals unless proper name or beginning a sentence: thus doctor, physician, dentist, pediatrician.

Names of diseases and medicines not capitalized unless named for a *person.*

X-ray not capitalized unless beginning a sentence.

Titles of articles when referred to *in the article* are not capitalized, or if capitalized should be in quotes.

Illustrations: All cuts required for illustration are furnished at *author's expense.* Clear photographs and wash drawings can be reproduced in halftone cuts; line drawings in zinc etchings. Minimum size halftones cost about $4 each; minimum etchings about $3. *Negatives* of radiograms, either glass or film, are not acceptable; *prints* should be submitted.

Bibliography: References to literature should appear in numerical order in the text and the bibliography should be collected at end of article with the same numbered references. It is rarely necessary to write names of medical journals in full. (J. A. M. A.)

Since 1927 the Index Medicus has maintained a uniform standard of references which answers every requirement of brevity, uniformity and accuracy that makes it the supreme arbiter in this field. This system was directed to our attention by Mr. Alfred L. Robert, medical librarian of Columbia University, and we have redacted copy recently submitted to the Journal in accordance with this plan. This was facilitated by the cooperation of the staff of the Crerar library.

If authors will follow this system from this date it will save extra work for all concerned.

The example quoted by Mr. Robert was taken from February (1934) ILLINOIS MEDICAL JOURNAL as follows:

"Ford, H. L., Deep neck infection—surgical approach, Illinois M. J. 65: 117-128, 1934."

It will be noted that this contains the author's name and initials, title of paper, name of journal abbreviated, volume number in *Arabic numerals,* pages, *first and last,* and year.

The data include everything necessary to locate the article in a library with nothing superfluous.

Similarly *quotations from books* should contain the author's name, title of book, place of publication, publisher's name, year and pages.

Arabic numerals are specified instead of Roman as they are more familiar and less liable to error in copying.

Phony Locutions: "He operated six cases; others were unoperated." It seems incredible that any physician or surgeon could be guilty of such a sentence, but unfortunately it is not so uncommon. Others "operate" patients. Why not operate "in" the case or "on" the patient.

The following quotation from Stedman's Medical Dictionary may clarify this usage:

"Case (kās) (L. casus, an occurrence). An instance of disease with its attending circumstances. The patient is not the case; the *patient* dies or recovers, the *case* terminates fatally or ends in recovery; the surgeon operates *in* a case, but operates *on* the patient."

Smith, Brown etc. Why not Smith, Brown et al.?

"Cases in whom" should be cases in which, but "patient in whom" is correct.

We again quote the excellent summary of language to avoid from the Journal of the Medical Association of Georgia.

REPREHENSIBLE MEDICAL ENGLISH

TWELVE VALUABLE POINTS IN THE LANGUAGE OF MEDICINE

1. "Case" must not be used for "patient," nor "cure" for "treatment."
2. "Tubercular" means "nodular"; "tuberculous" means "infected with the bacillus of tuberculosis."
3. "Cystoscope" is a noun and must not be used as any other part of speech.
4. It is possible to "operate a cotton-gin," *but it is not possible to "operate a patient"—nor his appendix.*
5. "Acute appendicitis" is common, but an appendix cannot be "acute."
6. "Acute abdomen" is beyond the pale.
7. "Pathology" means the "science of disease"; it is therefore absurd to speak of "pathology in the right lung."
8. "Positive serology" is the worst type of jargon; apparently "positive Wassermann reaction" is usually meant.
9. "Specific" and "luetic" are convenient to obscure meaning from patients' relatives, but "syphilitic" is better in writing for the medical profession.
10. It is incorrect to say the patient had "no temperature." One may say that there was "no elevation of temperature," but it is shorter to say there was "no fever."
11. "Shot" is perhaps the most abused and overworked word in medical literature. Shot is of lead.
12. Bad spelling is unpardonable, so a good dictionary is indispensable.

—Jour. Med. Assn. of Ga.

MEDICAL ECONOMICS

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The readers will have noted an enlargement in this section the past two months. This was in accord with the instructions of the Council of the Illinois State Medical Society, in view of the increased importance of this subject at this time. The number of contributors to the column has been increased and we shall endeavor to cover the subject more fully in the future. This month we have a new heading for the column. This is in accord with that of many of the state Journals and was recommended at the last meeting of the Council. Kindly let us know how you like the new heading and also tell us whether the column is giving you the desired information at this time.

On February 14, 1935, a meeting of the eleventh Councilor district, embracing Du Page, Will, Grundy, Kankakee, Ford and Iroquois Counties was held at Kankakee. Dr. Harold Camp of Monmouth, Secretary of the Illinois State Medical Society, and Dr. John Neal of Springfield, Chairman of the Legislative Committee of the Illinois State Medical Society were the principal speakers. They talked on the present governmental trends in regard to the future practice of medicine. Both had constructive proposals to offer to answer and combat the present arguments being advanced for these changes. The attention and interest of the 75 physicians present from all over the district demonstrated that the doctors are desirous to obtain all available information on this subject. It is hoped that similar meetings will be held at different points over the state in the near future to give the doctors throughout the state the opportunity to hear these and other men who are giving special attention to this subject.

The exact nature of the subject of Medical Economics is of course debatable. Surely, it has changed greatly in the past year or two. Prior to that time it was supposed to include principally a study of the finances of the physicians. It had only to do with the material things of life. It has now come to be recognized as concerned with the communal problems of economic life. Recently, it was defined in "An Introduction to Medical Economics," prepared by the Bureau of Medical Economics, American Medical Association, "as a branch of Economics which deals with the production, distribution and consumption of the values involved in Medical services."

Thus it comes to be a scrutinizing study of all possible agencies for altering the community needs in regard to medicine. The various new ideas advanced to reform and regulate the life and activities of medical men in regard to their contacts with society must be carefully scrutinized and studied by those interested in medical economics so that a definite decision as to their advantages and disadvantages can be arrived at and advice be given to our fellow practitioners. This Committee has attempted in the past year to extend its work to include just such activities as listed above. We have given particular attention to the subject of Group Hospitalization, about which there was an article in the last issue of this Journal. Surely the final word has not been spoken on this subject. It is to be hoped that the plan will be tried out in cities of different sizes under the restrictions laid down by the Council of the Illinois State Medical Society at its last meeting and in another year we will have the benefit of their experiences in arriving at the final decision as to whether the plan should be made more general or completely abandoned. The more the plan is studied, the more one becomes convinced that many excellent ideas are contained therein and if the danger of expansion to include professional fees and thus drift further toward State Medicine could be definitely avoided, it seems that as long as it remains under the direct control of the medical profession, it probably has a place in our future medical plans. Surely it will appeal to the laity, to whom the fear of a large

hospital bill has become almost a panic. That the hospitals are for it is apparent by the way the hospital executives are pushing it. We must all keep an open mind on the subject, and study the plan from all angles.

The recent meeting of the House of Delegates of the American Medical Association in Chicago, February 16 and 17, was well attended and the entire time of the delegates was given to consideration of the threatened legislation as it affected the medical profession. It was the opinon of practically every body present that the House should again go on record as opposing state medicine in any form, should disprove the recommendations of the Committee on Economic Security, so far as medical care is concerned; oppose again all Federal subsidies of medical care and its designated functions pertaining to medical care; and also oppose the Epstein Bill, to be introduced in many state legislatures. This action is in line with the opinion of all thinking medical men and is another evidence of the fact that the A. M. A. is alive to the problem and dangers threatening the very life of the practice of medicine. A special committee was appointed to study the question, "How may we improve medical care for all individuals according to their individual economic condition?" This committee, largely made up of the Bureau of Medical Economics, is to report back to the House in June during the annual meeting. Undoubtedly, there will be a more detailed report of this meeting in both this Journal and the J. A. M. A., and every physician should take the time to read the entire report of the session. It will be educational and at the same time encouraging to know that the best minds of the profession are studying the subject and preparing to refute the arguments advanced in its favor.

Several members of the Illinois State Medical Society, including the President, Secretary, and Chairman of the Legislative Committee, Dr. Neal, are planning to attend the Northwestern Conference on Medical Economics at St. Paul the latter part of this month. Past President Kreuscher, is the presiding officer of this conference and he has arranged a most interesting meeting and we hope to be able to report some of the conclusions arrived at in the next issue of this Journal.

We hope that this coming month a series of meetings of the different Councilor Districts of the state will be held to discuss the current economic problems. If one is held in your part of the state, let nothing keep you from attending the same. Leading men of the state will make the addresses and attempt to answer any of your questions. You will leave the meeting with a better grasp of the entire problem than you ever had before and more able to answer questions propounded to you, thus helping to influence public opinion in favor of the present manner and method of practicing medicine as opposed to the radical ideas of State Medicine.

E. S. HAMILTON,
Chairman of Committee on Medical
Economics of Illinois State Medical Society.

REALISM AND HEALTH INSURANCE

Occasionally, and particularly during periods of economic distress, great waves of popular sentiment in favor of some sort of change in social practices sweep over nations and even across the entire civilized world. While some change is often needed under such circumstances, these movements, gathering momentum on a single issue, fire the public imagination to the point where good and bad alike in the social structure are swept away. Witness the Crusades that began in the eleventh century and terminated three centuries later. Born of religious fervor, this movement held out pilgrimages to the Holy Land as a short cut to heaven. The wastage of human life and treasure was gigantic. Homes were broken up, Kingdoms destroyed, fortunes lost, and to no avail. Nothing in human experience of that period escaped the direful influence of the Crusades.

Now we are in the midst of a popular wave for economic reform. Doubtless some change is necessary. The movement, however, has assumed already many preposterous, impracticable and even fantastic features which do not wither for lack of popular support. The Townsend old age pension scheme, for example, which would dole out $200 monthly to every person over 60 years old is said to have many millions of signed adherents. Numerous States have before their legislative bodies for consideration old age pension bills scarcely less ludicrous in the light of practicable possibility.

Among many other proposed social reforms is the agitation for compulsory health insurance.

This movement is held out as a short cut to health. Let us examine the practicable possibilities to see whether or not any significant benefits may be anticipated under such a scheme on the one hand, and whether the costs would justify a change from the present system of providing medical care on the other.

To be practicable a health insurance scheme must give reasonable promise that it will actually cause a large proportion of those concerned to take advantage of medical care, both curative and preventive. Secondly, it must provide reason to believe that health among the insured will be better than that which now prevails. Thirdly, it must offer valid evidence that benefits will outweigh the costs. These points will now be considered in the order enumerated.

Will health insurance lead people to take advantage of medical service? The Metropolitan Life Insurance Company which has a dollar and cents interest in health matters, took a census of 6,245 children in the age group of six months to fifteen years, in order to find out how many were protected against diphtheria and the reasons for non-immunization when this was lacking. All of these children lived in communities where diphtheria prevention campaigns had been conducted so that the subject was well advertised. Of the 4,749 unprotected children the parents of one-half had simply neglected the matter. They knew that children could be immunized against diphtheria. They knew that this practice was sound, economical and practicable. They believed in it. Still they had neglected taking advantage of the medical service which would have insured their children against a dangerous, expensive and often fatal disease. The parents of one-fifth (20.5 per cent.) of the children did not believe in the procedure and had deliberately refused to have them inoculated. Parents of only 6.7 per cent. of the children gave economic reasons for not having had the protective treatments given.

This is clear and unequivocal evidence that medical service cannot be thrust upon people. To improve the health level in any appreciable degree the public must accept *preventive* rather than only *curative* practice. Has any reasonable person the temerity to believe, in the light of this study, that a health insurance scheme would, as if by magic, cause a revolution in mental attitude sufficient to create a demand for preventive medicine? At the most, an insurance scheme might provide facilities for extending the service to 6.7 per cent. of the people and these would be taken care of cheerfully without cost to them under the prevailing system.

Would a health insurance scheme improve health conditions among the insured? The experience of the United States Army compared with that in the general population ought to answer this question. Probably the best possible medical service available on a large scale is provided for the Army and the officers and troops are required by military discipline to accept medical service both curative and preventive. The general civilian population, on the other hand, accepts medical service on a purely voluntary basis, calling a doctor when the need arises.

The Army, moreover, includes only males of military age who were selected in the first place by medical examination which eliminated the physically unfit. The general population includes both sexes of all ages and of all degrees of physical fitness.

Comparison of the health experience in the Army with that of the general population is made possible by reference to the report of the Surgeon General of the Army for 1933 and to the report of 9,000 families embracing 39,000 individuals made by the United States Public Health Service. These 9,000 families lived in all parts of the nation. They had incomes ranging from $1,200 up, with one-half falling in the $1,200 to $2,000 class. Fully 40 per cent. of the individuals were children who are subject much more frequently than adults to contagious illness. In the study of these 9,000 families a nurse visited each home regularly for a year and recorded every type of illness no matter how trivial, including colds, accidents and pregnancies. For the Army a record is kept of only those illnesses which cause the patient to report for sick call.

During 1933 there were 578 cases of illness (including accidents) per 1,000 officers and men in the Army. Among the 9,000 families there were 516 cases of illness (including accidents and pregnancies) per 1,000 men, women and children which caused the loss of as much as one day from school, work or other occupation. For all illnesses, including inconsequential colds, the rate among the families was 850 per 1,000. In the Army a physician saw every case recorded.

Among the families a physician saw 79 per cent. of all cases and 85 per cent. of those which resulted in the loss of as much as one day from usual occupation.

These reports of actual experience show conclusively that health conditions in the general population are fully as favorable, all things considered, as are those in the Army. This is true in spite of the fact that the Army medical service is undoubtedly superior to any service that might be provided under an insurance scheme. The medical talent in the Army is selected with the greatest care and the medical officers are trained for service. Both preventive and curative practice is imposed upon the military personnel, a thing which could not be accomplished on the general population through insurance methods.

Would the alleged benefits from health insurance justify the costs? For salaries alone the Army spends about $4,254,000 annually in providing medical care for about 137,000 officers and men, about $30 per man. If hospitals and supplies were added the cost would probably be double. Anything that approaches adequacy under an insurance scheme for the general population or any substantial proportion thereof would cost no less. A cost rate of such magnitude would be out of all proportion to the benefits that might be derived and would add a severe burden to an already heavily taxed people.

Furthermore, a health insurance scheme always opens up the possibilities of exploitation by politicians and sharp practice loan sharks. In England recently there was brought to light a wide-spread game of exploiting the health insurance system. Unscrupulous organizations buy up and sell the privileges of health insurance practice to young physicians recently graduated who find it difficult to make a living. The cost of medical education is heavy. Few physicians are able to finance themselves during the early years out of college. Thus a health insurance practice which offers ready money opens up the way to no end of exploitation. Furthermore, the heart of every physician would be in the work among his clientele of paying character and not among his insurance patients.

There is no evidence that health insurance will cause people to voluntarily accept medical service of a preventive character more generally than at present. There is no evidence that it would lead to an improvement in general health conditions. There is plenty of evidence that neither of these results would follow and there is plenty of evidence that the cost of compulsory health insurance would be out of all proportion to the benefits that might conceivably accrue.

Let us be satisfied to observe the development, for the time being, of the other socialistic schemes, old age pensions, unemployment insurance, the shorter work day, bank deposit insurance and the numerous other devices now on trial. Experimental legislation during the last two years has not been an unqualified success. The costs have been enormous with no end of increasing public debt in sight. Let us postpone another venture until more valid promises of success in health insurance can be advanced.

In the light of that day the Crusades looked good on paper. The movement was seized upon as a short cut to heaven. Most of the participants probably wound up in another region—at least so far as their experiences on earth were concerned. Let us not repeat that experience in the sheep's clothing of health insurance.

J. R. Neal,
Chairman Legislative Committee,
Illinois State Medical Society.

WHAT SHOULD A PATIENT WITH ARTHRITIS EAT?

Walter Bauer, Boston (*Journal A. M. A.*, Jan. 5, 1935), points out that the first requisite in treating each patient with skeletal symptoms is to determine whether or not the symptoms are due to arthritis and, if so, to determine the type of arthritis. Not until this has been done should one attempt to prescribe a diet. There is no specific diet for patients with arthritides of known origin other than the dietary which would ordinarily be prescribed whenever the particular disease or etiologic agent responsible for the arthritis is dealt with. Gout is the one exception. Degenerative and rheumatoid arthritis represent the diseases one ordinarily thinks of as chronic arthritis. They are not causally related or due to the same etiologic agent. In degenerative arthritis, diet is indicated only in the presence of obesity, and then it should be sufficiently low in calories to allow weight reduction but adequate in every other respect. There is no evidence to prove that a low carbohydrate diet is indicated in rheumatoid arthritis, nor is there any proof that it is efficacious in curing the disease. Patients with rheumatoid arthritis should eat a diet high in calories (unless they are overweight), high in vitamins and adequate in respect to calcium, phosphorus and iron.

Correspondence

VITAMIN "E" AND FERTILITY

HEALTH DEPARTMENT
Stockton-on-Tees
England

February 13, 1935.

Secretary of the Illinois State Medical Society:

In one of our newspapers I have read references to vitamin "E" experiments as published in an article in the ILLINOIS MEDICAL JOURNAL. I am interested in the subject and I enclose a copy of a portion of my last annual report in which I dealt with the subject of Vitamin "E."

I am also interested in the possible connection between vitamin "E" and phosphorus intake.

I shall be grateful if you will send me any reports which you may have upon vitamin "E."

G. C. M. MCGONIGLE,
Medical Officer of Health.

The following is a copy taken from the annual report:

"Miscarriages. Animal experiments have made it appear probable that fertility and the ability to bear a full time child are closely associated with Vitamin E. Little is known about this vitamin.

"Some time ago I asked The Glaxo Laboratories if they could supply a concentrate of this vitamin. After considerable investigation this firm supplied me with a concentrate of wheat germ oil which appeared to have active properties. Whether the active principle of this concentrate is actually vitamin E is not definitely established but some interesting results have been obtained by its use.

"Seven women attending the ante-natal centre whose late pregnancy had terminated in a miscarriage, and who were anxious for a full time live child, were selected and given daily one capsule of the wheat germ extract. The period during which the daily dose was taken varied from three to six months. In each case a full time live child was born.

"The number of cases in this series is too small to allow any definite pronouncement to be made as to the efficacy of the wheat germ oil concentrate in preventing miscarriages; but the results are sufficiently interesting and encouraging to warrant a further and more extended trial.

"Miscarriages are responsible for much ill health among women and any methods which will reduce their number are worthy of exploration.

"Details of the following case are given as they illustrate an unexpectedly good result and are very interesting.

"Mrs. R. first attended the ante-natal center in 1929. She was then eight months pregnant. Examination showed that she was extremely ill, her urine was loaded with albumin and the dangers of eclampsia had to be faced. She was immediately admitted to the Municipal Maternity Home and gave birth to a still born child. She recovered.

"In 1930 the same thing happened. A still birth again occurred at the eighth month and the woman again had severe nephritis of pregnancy. In 1931 she had a miscarriage at the third month.

"In 1932 a stillbirth accompanied severe albuminuria at the seventh month. The following year she came to the ante-natal center when two months pregnant. She was warned as to the dangers of repeated pregnancies accompanied by albuminuria and the question of the advisability of terminating the pregnancy was considered. The patient was extremely anxious to have a live child and refused to attend, or to obtain outside medical help or advice, unless she was allowed to take the risk of continuing the pregnancy. She attended the center and was kept under observation, the urine being tested weekly for the first few months and later daily specimens were tested. She was given wheat germ oil extract, advised as to diet and her mode of life. She continued to attend and progressed normally and, at full term, was delivered of a normal and healthy infant.

"I make no comments upon this case beyond stating that the woman is fortunate to be alive and doubly fortunate in possessing a healthy live child after suffering from severe albuminuria which terminated four successive pregnancies in a period of four years.

"Wheat Germ Extract and Threadworms. A chance remark referring to the treatment of intestinal worms in horses caused me to try the effects of the wheat germ oil extract upon children suffering from threadworms. The results were unexpectedly interesting.

"The usual treatment of threadworms in young children is not particularly successful and is somewhat difficult to carry out.

"An experiment was conducted upon 59 young children attending the Child Welfare Centers who harboured threadworms in the bowel. Each child was given daily one capsule of the wheat germ oil extract for a period of a week (in some cases for a fortnight). No case was so treated unless the mother stated definitely that she had seen living threadworms in the motion. The mother's word had to be accepted when assessing the results.

"The results, according to the mothers' statements were as follows:

Good. Clear of worms in from 1 to 2 weeks	34
Not successful	14
No record (ceased to attend)	8
Child refused to take capsules	3
Total	59

"No aperients were given.

"Threadworms recurred in some few of the 34 cases reported as cured after intervals of from one to four months.

"The mothers reported, in the majority of successful cases, that the nervous symptoms so often associated with threadworms cleared up rapidly.

"These results appeared to be so encouraging that I communicated them to Dr. P. Smith of the Newcastle-

upon-Tyne Dispensary whom I knew was interested in the problem. He carried out further experiments on similar lines and obtained similar results.

"A summary of his results is as follows:

Cases successfully treated with wheat germ oil extract...	40
Not successful	2
No record (ceased to attend).....	39

"Both Dr. Smith and I found that many of the children gained weight rapidly during and after the treatment. Whether this was due to elimination of the threadworms or to some effect of the wheat germ oil extract we are unable to say.

"The mothers were enthusiastic as to the improved general condition of the children.

AN APPRECIATION OF OUR LEGISLATIVE ACTIVITIES

INDIANA STATE MEDICAL ASSOCIATION

February 7, 1935.

J. R. Neal, M. D. Chairman,
Legislative Committee,
Illinois State Medical Society.
Springfield, Illinois.

Dear Doctor Neal:

Enclosed are legislative bulletins which we have sent out so far during this session of the legislature. We are using your system of organization for legislative work and it is most effective.

THOMAS A. HENDRICKS,
Executive Secretary.

NORTH CAROLINA APPRECIATES THE ACTIVITIES OF THE ILLINOIS STATE MEDICAL SOCIETY

WINSTON-SALEM, N. C.

February 21, 1935.

To the Editor: While attending the recent meeting of the House of Delegates, of the A. M. A., I got a copy of "Why We Oppose Health Insurance," gotten out by a committee of the Illinois State Medical Society. I have read it a number of times, each time with increasing admiration. It is the clearest cut, most logical, and altogether unanswerable argument against state medicine that I have yet seen. I wonder if you could send me a dozen or more copies to send to our state congressmen and senators, together with a letter I propose to write them as chairman of our state Public Health Relations Committee. Our state secretary, Dr. McBrayer, tells me that he expects to put in a much larger order. I certainly would appreciate your sending me some extra copies now.

WINGATE M. JOHNSON, M. D.

THE PARABLES OF SOPHISTES, THE SEER

THE HOUSEHOLDERS AND THE BRIGANDS

To the Editor:

The Younger Practitioner was sore perplexed. And in the depth of his perplexity did he make pilgrimage to Sophistes, the Seer, that he might receive crumbs from the table of his abundant wisdom.

From the confusion that was in his mind he saith: "O, Sophistes, Learned Physician, for lo, these many years, the field of the healing art suffereth trangression from without until it seemeth that only clouds of darkness overshadow us and our work; yea, my heart taketh not rest at night from fearsomeness.

"The poor hath been with us always and we have given unto them without money and without price. Then cometh the tetrarch of my province with a plan whereby one physician careth for all the poor and many physicians seek this position though it payeth but a pittance. And many are the people who come unjustly seeking this charity even though they be amply able to pay therefor.

"Furthermore, the soldier returneth from the wars and the military careth for him even to his old age and for ailments that hath naught to do with his service in the wars, yea, even though he be rich in land and in cattle or it be that his ailment cometh from his own vices, care they for him.

"Moreover, if one who laboreth in the field or in the vineyard suffereth a hurt or is stricken with a fever, the master provideth for him a physician who careth for him in his sickness or who bindeth up his wounds and the master payeth therefor.

"In all these things the physician who serveth the tetrarch, the military or the masters receiveth but a trifle for what he doeth, yet he striveth covetously to secure such appointments the one underbiddeth the other and thereby disrupeth the whole of the healing art.

"Furthermore, there riseth up sects who would heal the ailing by prayer unto false gods and by the laying on of hands. All this taketh from the physician many of his people.

"Now, in the year of the great drouth when famine and pestilence are abroad throughout the land there cometh a statute and an ordinance from the Imperial Dictator that all who are an hungred shall be fed and all who aileth shall be

given succor by the physicians. And the scribes and envoys and those who investigate are in multitude even as the sands of the seashore and the tax that is imposed goeth much more for these self-conceited scribes and envoys and investigators than goeth for food or raiment or shelter or for of the care of those who aileth, and the physician who is taxed the most receiveth but a trifle for the service that he giveth. And whensoever the silver with which to pay runneth low the scribes and the envoys continue on and are paid but the physician receiveth naught.

"O, Sophistes, the Wise One, I fear me that we of the healing art are as chaff that the wind bloweth away, we are as a well without water, we are as one who walking in darkness and knoweth not whither he goeth.

"All this and more befalleth us and so causeth my heart to despair that I beseech thee, O, Sophistes, the Venerable, that ye show us a path out of the wilderness!"

Then spake Sophistes, the Seer:

"In the barren hills beyond the village of my birth there dwelt a group of wicked brigands. In the dark watches of the night did they come forth from the hills and steal from the householders of the village. At first they stole only grapes from the vineyard or corn from the field. And throughout the province other bandits did likewise. As they became greater in numbers they took goats and sheep from the flocks and cattle from the herds. Becoming more bold they drove my people from their home and took unto themselves even their homes and their fields and their vineyards and their flocks.

"My people were wroth and many a good man of the house went forth against the brigands but before their power and numbers he was helpless and he was robbed and beaten or slain.

"Then one from a neighboring village came unto my people and saith unto them, 'Each of us when he standeth alone is as a reed broken by the wind. The possessions that are justly ours and that which we have wrought, our enemy taketh away and desolation cometh unto us and unto our children. Our affliction increaseth and I foretell you that destruction awaits us from our tormentors.

" 'Howbeit if we are banded together no man durst stand against us and it is beyond peradventure that in our might we shall resist the onslaughts of our enemies and mayhap we shall reclaim somewhat of that which hath been taken from us. A child breaketh a twig of wood in his hands but when many twigs are bound into a fagot it resisteth the strength of the strongest among you. What answereth thou?'

"Then did my people band themselves together and they were mindful that not one should be left out. And this was done throughout the tetrarchy and in their might did they drive forth the brigands and did restore the households and the fields and the vineyards, yea, even of the flocks that had been taken from them.

"Go thou and do likewise."

Thus saith Sophistes, the Seer.

(*Alias*) C. G. FARNUM,
Peoria, Ill.

SHALL LAYMEN REGIMENT PROFESSIONS?

The joint meeting of the Detroit Bar Association and the Wayne County Medical Society on February 25, 1935, is for the purpose of informing lawyers and physicians as to problems common to both groups, and to develop sustained, unified, forceful action for the eradication of exploitation.

Four foundations, bolstered by millions derived from finance, are active in efforts to exploit the professions. Two men, not of the profession, working for the Mil-Bank Fund, seem to have cleverly and adroitly insinuated themselves between the profession of medicine and the Committee on Economic Security which reports directly to the President of the United States. These two men working for an organization that pays their salaries from money derived from profits on *baby's milk* are committed to the socialization of medicine.

The doctor will be accorded the same type of commercial regimentation under which the milk man now operates, but with a difference. The milk business is private monopoly; the *contemplated business of medicine* will be state medicine. Finance and industry, including milk moguls, will be the forces directing governmental control.

To stop the commercialization of the sick, and to spare the people from mechanized medical service, the professions of Law, Dentistry, Nursing, Pharmacy, and Teaching must support the doctor in his responsibility. —*Detroit Medical News*, February 25, 1935.

WILL AMERICA COPY GERMANY'S MISTAKES?

The Public Relations Bureau of the Medical Society of the State of New York has released for publication the following informative data:

Albany, N. Y., Feb. 24.—"The acid test of experience condemns compulsory health insurance schemes wherever they have been tried," stated Dr. Arthur J. Bedell, president of the Medical Society of the State of New York here today, in opposing the bill now pending in the state legislature.

"The medical profession disapproves of the proposed

law because this method of handling medical care is damaging to the patient and disastrous to the doctor.

"This protest does not mean opposition to the policies of the administration in its recovery efforts or in any other phases of the 'New Deal.' However, physicians as a class are better qualified to speak than any other group, as to the effects of a compulsory health insurance law on the community. The Medical Society of the State of New York, representative of the physicians of the state, rejects the project. It will not work. It will bring to the community conditions quite the opposite of the expectations of its well-wishing proponents."

Dr. Bedell pointed to the utter failure of compulsory health insurance in Germany, where it has been tried for half a century. He said that Gustav Hartz, labor economist of Berlin, and author of several books on German's social politics, has analyzed the fallacies of the scheme and exposed to the world the harm, rather than good, that compulsory health insurance has actually produced. Dr. Bedell stated that this report, entitled, "Will America Copy Germany's Mistakes?," will be published in the March 1 issue of the *New York State Journal of Medicine* as translated from the German by the Pennsylvania Self-Insurers' Association of Philadelphia.

"Sick insurance," according to the report, "provides the workman with medical attendance free of charge, with medicine and other necessities, and with an allowance. Anyone will at first sight consider this a great blessing for the workman as well as for national health. The reality, however, is far different.

"The insured workman becomes a second class patient. The mass demand compels a limitation in the use of medicines. Doctors must not prescribe what they consider good for the patient; they are only allowed to give remedies entered in a book of medical regulations for insurance purposes.

"Dread of illness obsesses most people and this has been pressed into a system 'illness made easy' by which the will to be well is strangled. The doctor is consulted a dozen times where once would be sufficient—the insurance pays. The prescribing of medicine and bandages is desired. When they have been obtained they lie about until they are no longer fit to be used—the insurance pays. Besides it is nice to get something in return for the premiums paid year in and year out. There is developed a fear of illness which shakes the will for recovery—the best aid to health. Pretenders and hypochondriacs are bred and the use of medicine becomes excessive.

"Medical science has become a cheap article and doctors have given up conscientious treatment. The genuine patient is neglected, is not given the necessary care. The greater the mass consultation, the lower are the doctor's fees. They are, therefore, compelled to resort to mass practice.

"All this is at the workman's expense, for the part of the premiums supposed to be paid by the employer is in reality borne by the workman either as a consumer or wage earner. As the employer's premium share is immediately connected with the wage, it is shifted over on the wage. In Germany, no one any longer doubts the fact that the employer's share of the premium is taken from the workman's wages. What the employer pays as his contribution, he cannot pay the workman in the form of wages.

"A network of deception has been spread. In millions of cases wrong was turned into right and the gates opened wide to fraud. When wages are being decreased, when work is scarce and work hours shortened, when there are fewer shifts, many holidays, sick insurance comes in handy. One objects to the work he is given, another does not feel like working. Matters soon make an extensive controlling system necessary. This ends in badgering all persons.

"Patients are visited in their homes by controlling officials who have to convince themselves that the patient is really ill and not doing any work. The sick insurance engages so-called confidential doctors who have to submit the patient to a final examination to see whether he is too ill to work. The results of such examinations are to a great extent startling. Here is one instance from among thousands: 2008 patients were ordered to appear for a final examination. Eight hundred sixteen of them at once declared their complete recovery; 289 were found to be well by the confidential doctor. So nearly half of them were not ill at all.

"The confidential doctor is, so to say, the medical policeman, who not only controls the patients but also his fellow doctors who are treating them.

"The genuine patient is justly indignant to find that the existence of his illness is doubted, and that he who has always paid his premiums regularly and has a right to demand conscientious attendance, is considered a cheat.

"This system, together with the rest of the bureaucratic apparatus, has wedged itself between doctor and patient, completely destroying the patient's confidence in his physician, which greatly retards all recovery.

"Those who know anything about the actual working of compulsory health insurance will not be surprised that the confidential doctor, whose task it is to keep the number of patients low, may declare a patient recovered, who nevertheless dies two days later."

MICHIGAN LABOR UNIONS BID TO CONTROL MEDICINE

The following is taken from the *Detroit Medical News,* February 25, 1935.

LABOR UNIONS BID TO CONTROL MEDICINE!

Michigan House Bill No. 111, introduced in the Legislature last month by Representative Martin, provides for the establishment of sickness, unemployment, old age and social insurance to be administered and controlled by workers' and farmers' organizations.

"The People of the State of Michigan Enact:

"Section 1. The department of labor and industry is hereby authorized and directed for the immediate establishment of a system of unemployment insurance for the purpose of providing compensation for all workers and farmers above 18 years of age, unemployed through no fault of their own. Such compensation shall be equal to average local wages, but shall in no case be less than ten dollars per week plus three dollars

for each dependent. Workers willing and able to do full-time work but unable to secure full-time employment shall be entitled to receive the difference between their earnings and the average local wages for full-time employment. The minimum compensation guaranteed by this act shall be increased in conformity with rises in the cost of living. Such unemployment insurance shall be administered and controlled, and the minimum compensation shall be adjusted by workers and farmers under rules and regulations which shall be prescribed by the department of labor and industry in conformity with the purposes and provisions of this act through unemployment insurance commissions and directly elected by members of workers' and farmers' organizations.

"Section 2. The department of labor and industry is hereby further authorized and directed to provide for the immediate establishment of other forms of social insurance for the purpose of providing compensation for all workers and farmers who are unable to work because of sickness, old age, maternity, industrial injury, or any other disability. Such compensation shall be the same as provided by section 1 of this act for unemployment insurance and shall be administered in like manner. Compensation for disability because of maternity shall be paid to women during the period of eight weeks previous and eight weeks following childbirth.

"Section 3. All moneys necessary to pay compensation guaranteed by this act and the cost of establishing and maintaining the administration of this act shall be paid by the government of the state of Michigan. All such moneys are hereby appropriated out of moneys in the general fund. The benefits of this act shall be extended to workers, whether they be industrial, agricultural, domestic, office, or professional workers, and to farmers, without discrimination because of age, sex, race, color, religious or political opinion or affiliation. No worker or farmer shall be disqualified from receiving the compensation guaranteed by this act because of past participation in strikes, or refusal to work in place of strikers, or at less than average local or trade-union wages, or under unsafe or insanitary conditions, or where hours are longer than the prevailing union standard of a particular trade or locality, or at an unreasonable distance from home."

SOME PROVISION SHOULD BE MADE FOR REIMBURSING DOCTORS AND HOSPITALS FOR SERVICES RENDERED VICTIMS OF AUTOMOBILE AND OTHER ACCIDENTS

There is apparent a gradual awakening for the need of reimbursement for services rendered victims of automobile and other traffic accidents. As every physician and many hospitals know to their sorrow such services in the majority of cases must be marked off to actual loss. This is as true in Europe as it is in America, and "over there" action to prevent such injustice is even now pending.

The hospitals were the first to howl over the state of affairs. In Ohio, in 1933, a law was enacted with intent to provide some sort of protection for the hospitals in that state. Now the need of protection for physicians is even greater than is that of the hospital, and it is one instance where "still another law" can with benefit be placed upon our statute books. In 1931 it was estimated that the total loss from such sources—i. e.—unpaid medical and hospital bills for automobile highway accidents totaled about twenty-five million dollars.

Upon this subject the *Nebraska State Medical Journal* printed an editorial, so highly informative, that it is with pleasure that the article is herewith reproduced.

REIMBURSEMENT FOR HOSPITALS FOR CARE OF INDIGENT INJURED IN AUTOMOBILE ACCIDENTS: THE OHIO LAW

Some time ago (June, 1932) we published an editorial touching upon the need of providing some means of reimbursing hospitals and physicians for the care of indigent persons injured in automobile accidents. It was estimated that in 1931 the hospital bills for the highway accidents amounted to $24,000,000, forty per cent of which is uncollectable. At the same time it was estimated that an equal amount is the value of medical and surgical services and that 40 per cent remained uncollectable. The total loss of hospitals and medical service was therefore estimated to be about $25,000,000 for that one year.

The State of Ohio, in 1933 passed a law providing for the payment of hospital care to indigent injured in automobile accidents. So worthwhile is this law that we give it here almost in its entirety.

This law should go a step further to include necessary and reasonable physicians' fees, on about the same basis as Workmen's Compensation fees, for the same class of injuries treated, and with the same provisions as outlined for hospitals.

It appears to the writer that there are two methods of approach in this matter—the Ohio plan herewith given or compulsory indemnity insurance for all licenses, payable in case of accidents to hospital and physician as their interests may appear.

The medical profession and hospitals should rise in their might and demand some recourse from an intolerable situation.

AN ACT

To provide reimbursement for hospitals on account of expenses of the care of indigent persons injured in motor vehicle accidents and to amend sections 6291 and 6309-2 of the General Code.

Be it enacted by the General Assembly of the State of Ohio:

DEFINITIONS

Section 1. For the purpose of this act:

"Motor vehicle injury" means any personal injury suffered by a human being and caused by the operation of a motor vehicle, whether the injured person be the operator of such motor vehicle, a passenger in the same or in another vehicle, a pedestrian, or whatever be the relation of such injured person to the operation of such vehicle; and whether or not such motor vehicle is under the control of a human being at the time of such injury.

"Hospital" means any institution, not organized and/or operated for profit, and registered with the state of

Ohio, department of health, which receives and cares for patients suffering from motor vehicle injuries, the per diem cost of which care shall be ascertained and certified in the manner provided in this act.

"Per diem cost" means the per diem cost of caring for a patient in a hospital as determined by the industrial commission of Ohio for the purpose of the laws which it is required to administer.

"Indigent patient" means a person who has suffered a motor vehicle injury, is received and cared for in a hospital, is unable to pay for the cost of such care and whose account therefore remains unpaid at the expiration of ninety days after the termination of such care; it excludes an employee suffering from a motor vehicle injury with respect to which he is entitled to the benefits of the workmen's compensation act of this or any other state or country. A person injured by the operation of a motor vehicle shall be deemed unable to pay such charges if it shall appear that, should an action be brought and judgment secured for the amount thereof against him, or against any other person legally responsible for his care, execution thereon would be unavailing.

INDUSTRIAL COMMISSION SHALL CERTIFY PER DIEM COST OF HOSPITAL

Section 2. Within thirty days after this act shall take effect the industrial commission of Ohio shall certify in duplicate to the registrar of motor vehicles and the auditor of state, respectively, the name, address and per diem cost of all hospitals in the state as determined by the said industrial commission for the purpose of the laws which it is required to administer. Thereafter, from time to time, said industrial commission of Ohio shall in like manner certify any additions to or subtractions from said list or any changes in such per diem costs which may occur. All claims made under this act shall be audited and paid in accordance with the per diem costs so certified and in effect at the time the charge shall have been incurred.

HOSPITAL SHALL FILE MONTHLY REPORT; CONTENTS

Section 3. Each hospital, in order to be entitled to the benefit of this act, shall make and file with the registrar of motor vehicles monthly, as of the last business day of each month, a report under oath showing the name of each sufferer from a motor vehicle accident, received into and cared for in such hospital during the month covered by the report, for whom such hospital may desire to make claim under this act; the time and place of the accident or occurrence in which the injury was incurred; the total number of day's care given to such sufferer in the month for which report is made and in any preceding month or months; the date of the receipt and discharge of such sufferer or other termination of such care; and such other facts or information as the registrar of motor vehicles may require in the form of report prescribed by him.

HOSPITAL MAY PRESENT STATEMENT OF CLAIM; CONTENTS

Section 4. At the time of making any monthly report each hospital may present a statement of its claim for reimbursement for the cost of the care of each indigent patient, which claim has matured within the month covered by the report then due or within any previous month. Each such claim shall be made in the form prescribed by the registrar of motor vehicles and shall show the following:

1. The name of the person to whom care has been given.
2. The number of days' care, with the dates of reception into the hospital and discharge or other termination of care.
3. The amount of the claim.
4. A statement under oath, showing the effort made by the hospital to collect the amount of the claim from the indigent patient, and the amount, if any, collected from such patients, or any other person on his account.
5. The affidavit of the indigent patient, if living, and the statement of a township trustee, municipal officer or director or like representative of a social agency engaged in the relief of the poor, having knowledge of the facts, showing that the indigent patient is unable to pay such hospital charges.
6. Such other facts and information as the registrar of motor vehicles may require in the form of claim prescribed by him.
7. For the purpose of the claim provided for in this section an indigent patient who is not otherwise able to pay such hospital charges shall not be deemed to be able to pay the same because a third person might be held liable in an action to recover damages on account of such motor vehicle injury, which has not been filed; but if such an action has been filed, the statement of claim shall show the fact and the registrar of motor vehicles may in such event suspend the determination of such claim until such action shall have terminated and may require such hospital to furnish such further information with respect to such action as he may deem necessary in order to determine the ability of the patient to pay the charges for which claim is made.

EXAMINATION AND AUDIT OF CLAIMS BY MOTOR VEHICLE REGISTRAR

Section 5. The registrar of motor vehicles shall examine and audit each claim presented to him under the provisions of this act. From the facts and information contained in the claim, the monthly reports of the claimant hospital, the supporting certificates and affidavits, and such other evidence as he may require, the registrar of motor vehicles shall ascertain and determine, as to each claim, the following facts:

1. Whether or not the claim is predicated upon care given to a person suffering from a motor vehicle injury as defined in this act.
2. Whether or not such person is able to pay the hospital charges for which the claim is made, within the meaning of this act.

PAYMENT OF CLAIM

Section 6. When and if the registrar of motor vehicles shall have determined that a claim presented to him under the provisions of this act by a hospital which has complied with said provisions is made in respect of an indigent patient as evidenced by his findings under section 5 of this act, he shall determine the amount of

such claim in accordance with the per diem cost of such hospital as certified to him under the provisions of this act less any amount collected from the patient, and shall pay the amount so ascertained to the claimant from the "state maintenance and repair fund" available for his use and appropriated for that purpose. The registrar of motor vehicles may make monthly payments to each hospital entitled to receive the same covering all claims audited and approved by him within the preceding month.

DISAPPROVAL OF CLAIM

Section 7. If the registrar of motor vehicles shall disapprove any claim made under the provisions of this act, except as to the amount thereof, he shall notify the claimant hospital that the same has been rejected, and state in such notice the ground or grounds of rejection. In such event the claimant hospital shall be entitled to a hearing before the registrar of motor vehicles on the ground of rejection so specified, within thirty days after the receipt of such notice, and his decision thereon shall be final.

PROCEDURE IF PATIENT, OR PERSON LEGALLY CHARGEABLE, BECOMES ABLE TO PAY

Section 8. Whenever it shall come to the knowledge of the managing officer of a hospital which has received payment of a claim under the provisions of this act that the patient in respect of whom such claim has been paid, or any other person chargeable by law with his care and support has paid, or is or has become able to pay the amount thereof, such managing officer shall notify the registrar of motor vehicles thereof, and, if such hospital shall thereafter make a monthly report and/or a claim for reimbursement under the provisions of this act, a reference to such paid claim in such form as the registrar of motor vehicles shall prescribe, showing the name of the patient and the amount paid, shall be incorporated in or attached to such report or claim. Wherever the registrar of motor vehicles shall otherwise acquire knowledge of facts showing that a patient in respect to whom a payment has been made as provided in this act, or any other person chargeable by law with his care and support has paid, or is or has become able to pay such amount thereof, he shall notify the hospital which has received such payment by letter addressed to the managing officer thereof, giving a brief statement of the facts thus coming to his knowledge and specifying the amount of such paid claim, the date of its prior payment, and the name of the person from whom the same may be recovered.

Within one month after such managing officer shall have given the notice herein required, or such hospital shall have received such notice from the registrar of motor vehicles, such hospital shall, unless the amount specified therein has been fully paid, collect such amount or the balance thereof from such patient or other person chargeable by law with his care or support and in default of such collection, file an action against such patient or other person chargeable by law with his care and support for the recovery of the sum so paid, as balance thereof. Such hospital shall in its monthly reports, or otherwise, advise the registrar of motor vehicles as to the collection of such amount, or as to the filing of such action and the proceedings therein; and in the event of recovery of judgment therein, and if the amount of such judgment is not realized, shall show by certified copies of the proceedings that all legal remedies for the satisfaction of such judgment have been exhausted.

When notice has been given as required by this section the registrar of motor vehicles shall deduct the amount of the prior payment made to the hospital affected thereby from any payment or payments to be made to such hospital under the provisions of this act on or after two months from the date of such notice, unless such hospital shall have advised the registrar of motor vehicles as herein provided that an action has been filed for the recovery of such amount from the patient or other person chargeable by law with his care and support, that such action has not been finally determined, and that there is reasonable ground for delay; or unless such hospital shall so advise the registrar of motor vehicles that such action has been prosecuted to final judgment and that all legal remedies for the satisfaction of such judgment have been exhausted without realizing the amount thereof.

ACTION TO RECOVER PAYMENT

Section 9. Whenever under the provisions of section 8 of this act the registrar of motor vehicles would be authorized to deduct the amount of a prior payment to a hospital from a subsequent payment or payments to such hospital, he shall, in the event no such subsequent payment shall fall due within three months after the right to make such deduction accrues, certify the amount of such prior payment, without interest, to the attorney general for collection from such hospital. Such amount may be recovered from such hospital in an action brought in the name of the state by the attorney general for the use of the "state maintenance and repair fund." Such action shall be brought within the time limited by law for the commencement of civil actions upon liabilities created by statute other than forfeiture and penalties and the cause of action in such cases shall be deemed to have accrued on the date on which such right of deduction arose.

Section 10. That sections 6291 and 6309-2 of the General Code be amended to read as follows:

PURPOSE OF ANNUAL LICENSE TAX

Section 6291. An annual license tax is hereby levied upon the operation of motor vehicles on the public roads or highways of this state, for the purpose of enforcing and paying the expense of administering the law relative to the registration and operation of such vehicles, maintaining and repairing public roads, highways and streets, paying the counties' proportion of the cost and expenses of cooperating with the department of highways in the improvement and construction of state highways, paying the counties' portion of the compensation, damages, cost and expenses of constructing, reconstructing, improving, maintaining and repairing roads, and for the use of the general funds of the counties and the townships and for the purpose of enforcing and paying the expenses of administering the law to provide reimbursement for hospitals on account of the expenses

for the care of indigent persons injured in motor vehicle accidents, and as to the tax levied between the effective date of this act and March 1, 1933, for the purpose of providing poor relief in the various counties of this state. Such tax shall be at the rates specified in this chapter and shall be paid to and collected by the registrar or deputy registrar at the time of making application for registration as herein provided.

DISTRIBUTION OF REVENUE; STATE MAINTENANCE AND REPAIR FUND

Section 6309-2. The revenue collected under the provisions of this chapter shall be distributed as follows:

(1) Twenty-five per centum of all taxes collected under the provisions of this chapter shall be for the use of the municipal corporation or county which constitutes the district of registration as provided in this chapter. The portion of such money due the municipal corporation shall be paid into the treasuries of such municipal corporations forthwith upon receipt by the county auditor, and the remainder retained in the county treasury. In the treasuries of such counties, such moneys shall constitute a fund which shall be used for the maintenance and repair of public roads and highways, and for no other purpose, and shall not be subject to transfer to any other fund. "Maintenance and repair" as used in this section includes all work done upon any public road or highway in which the existing foundations thereof are used as a subsurface of the improvement thereof in whole or in substantial part; and in the treasuries of such municipal corporations, such moneys shall constitute a fund which shall be used for the maintenance, repair, construction and repaving of public streets, and for no other purpose and shall not be subject to transfer to any other fund, provided, however, that as to such municipal corporations, not more than 50 per cent of the total funds available during any year from such source including the unexpended balance of such funds from any previous year, shall be used in such construction and repaving which shall be done by contract let after the taking of competitive bids as provided by law, or in the manner provided in the charter of any such municipal corporation.

(2) Five per centum of all taxes collected under the provisions of this chapter, together with interest earned by fees deposited by the treasurer of state as provided in section 6309 of the General Code, shall constitute a fund for the use of the several counties for the highway and road purposes specified in paragraph (3) of this section. Said fund shall be divided equally among all the counties in the state. Said fund shall be paid out on vouchers prepared by the registrar and warrants drawn by the auditor of state in equal proportions to the county auditor of each county within the state to be used for the purposes herein designated.

(3) Forty-seven per centum of all taxes collected under the provisions of this chapter shall be for the use of the county in which the owner resides or in which the place is located at which the established business or branch business in connection with which the motor vehicle registered is used, as the case may require, for the construction, reconstruction, improvement, maintenance and repair of roads and highways.

(4) Twenty-three per centum of all taxes collected under the provisions of this chapter shall be paid by the registrar into the state treasury to the credit of the "state maintenance and repair fund," as provided in section 6309 of the General Code.

The "state maintenance and repair fund" provided for herein shall be available for the use of the registrar in defraying the expenses incident to carrying out and enforcing the provisions of this chapter and (to the extent of a sum equal to nineteen cents for each motor vehicle registered in the state for each year) in carrying out and enforcing the provisions of this act to provide reimbursement for hospitals on account of expenses for the care of indigent persons injured in motor vehicle accidents and for the use of the director of highways in the manner provided by law. The general assembly shall make appropriations therefrom for such purposes.

EDUCATIONAL COMMITTEE

February Report

SPEAKING APPOINTMENTS

60—Physicians gave popular health talks before a great variety of audiences:

Rotary Clubs.
Lions.
Kiwanis.
Women's Clubs.
Parent Teacher Associations.
High School assemblies.
Commercial College students.
Sunday evening clubs.
Y. M. C. A.s.
Business Women's groups.
Social service centers.
Women's Auxiliaries to medical societies.
Transient boys and men of the Illinois Emergency Relief.

Programs were arranged for lay groups in the following cities:

Chicago—30 clubs	Warren
Joliet	East St. Louis
Waukegan	Dixon
Mt. Greenwood	Oak Park
Minonk	Humboldt
Danville	Springfield
Des Plaines	Ridgefarm
Morris	Pana
Crystal Lake	Beverly Hills
Park Ridge	Riverdale

SCIENTIFIC SERVICE APPOINTMENTS

19—Physicians were scheduled to present scientific papers before medical societies as follows:

Scott County, Iowa—Kellogg Speed—Surgery.

Rock Island—A. C. Ivy—Viscero-Visceral Reflexes as Related to Symptomatology.

Will-Grundy—Jerome R. Head—Pulmonary Tuberculosis.

11th Councilor Dist. John R. Neal, Charles S. Skaggs, Harold M. Camp, Medical Problems.

LaSalle County—E. P. Sloan—Exophthalmic Goiter. V. M. Leech—Ophthalmology.

St. Joseph's Hospital, Elgin—J. H. Mitchell—Common Skin Diseases.

Fulton County—David S. Hillis—Management of the Normal Labor Case.

McHenry County—Charles H. Phifer—Illinois Emergency Relief and the Medical Profession. Julius H. Hess.

Monroe County—J. A. Ikemire—Endocrinology.

DeWitt County—John R. Wolfer—Management of Gall Bladder and Biliary Tract Disease.

Warren County—George K. Fenn—Angina Pectoris. Guy M. Cushing—Acute Perforating Gastric and Duodenal Ulcers.

Christian County—James H. Hutton—Practical Points in Endocrine Diagnosis and Treatment.

Franklin County—Clarence L. Wheaton—Lobar Pneumonia.

Franklin County—Thomas P. Foley—Heart Disease.

Whiteside County—C. C. Maher—Hypertension.

HELP GIVEN MEDICAL SOCIETIES IN PROMOTING SCIENTIFIC PROGRAMS

297—Double-postal card notices mimeographed and mailed to physicians for LaSalle County.

131—Notices to physicians about Perry County Medical meeting.

132—Doctors sent notices about the 11th Councilor District meeting.

142—Postal-card announcements to physicians about Jefferson-Hamilton County Medical Society.

136—Announcements mailed for Franklin County Medical Society.

258—Announcements mailed to physicians for Whiteside County Medical Society.

PUBLIC LIBRARIES

180—Health articles sent to Chicago libraries for posting and reference filing.

328—Health articles sent to downstate libraries.

4—Health stories for posting to Central Y. W. C. A., Chicago.

4—Health stories for posting to Chicago Red Cross headquarters.

RADIO PROGRAMS

22—Radio broadcasts covering a period of approximately one hour per week from stations WAAF, WGN, WBBM and WJJD.

Robert S. Berghoff—Heart Disease.
Elmer W. Hagens—Ear Troubles in Children.
Leroy H. Sloan—Getting Your Money's Worth.
Harold W. Miller—The Climatric.
Walter L. Palmer—Saving of Human Life.
S. J. Taub—Bronchial Asthma.
E. D. Nora—Care of Heart Patients.
J. G. Gallagher—Appendicitis.
Jerome W. Hayden—The Ear.
W. W. Furey—The Use of X-Ray.
W. B. Serbin—Hospital Maternity Care.
S. J. Taylor—The Thyroid Gland.
Albert H. Andrews—The Common Cold.
Louis Schultz—Lesions of the Mouth.
Harold Voris—Neuralgia.
Frederick Tice—Tuberculosis.
James P. Simonds—The Rising Death Rate from Cancer.
Samuel Soskin—Prevention of Diabetes.
Stanley J. Norys—Nasal Obstructions.
J. J. Moore—Routine Laboratory Examinations.
J. H. Wallace—Heart Disease in Children.
A. J. Larkin—Red Birthmarks or Angiomas.

ASSISTANCE TO WOMAN'S AUXILIARY

Programs arranged for the Women's Auxiliaries of Will-Grundy, McHenry, Woodford, St. Clair counties.

334—Notices mimeographed for Woman's Auxiliary, Chicago Medical Society.

350—Invitations to members of Woman's Auxiliary, Chicago Medical Society.

50—Copies of minutes of Board meeting of Auxiliary to Illinois State Medical Society.

Material furnished program chairman of the State Auxiliary.

Vivisection material furnished a number of Auxiliaries.

NEWSPAPER SERVICE

Service to Chicago Medical Society and its branch societies:

4—Newspaper stories re Northwest Branch.
4—Newspaper stories re Calumet Branch.
5—Newspaper stories re Jackson Park Branch.
4—Newspaper stories re North Shore Branch.
9—Newspaper stories re Chicago Medical Society.
88—Releases re LaSalle County Medical Society.
44—Releases re Franklin County Medical Society.
61—Releases re DeWitt County Medical Society.
54—Releases re Whiteside County Medical Society.
20—Releases to newspapers using one health column each month.
415—Releases to newspapers using health column daily or weekly.

Press articles were written and approved on the following subjects:

Hospital Maternity Care.
What You Should Know About Tuberculosis.
The Way to Develop Proper Posture.
Red Birthmarks or Angiomas.
Spring Fever in Disguise.
The Thyroid Gland.

CONTACTS WITH LAY ORGANIZATIONS

A program on health insurance and what it means was arranged for the public health chairmen of the Chicago district of the Illinois Federation of Women's Clubs. This program brought forth much discussion and more note taking than any other subject.

The National Congress of Parents and Teachers has furnished the Educational Committee a supply of Summer Round-Up material for use in Illinois. This will be mailed out to all county medical society secretaries within a short time. The Illinois Congress has asked the Committee to furnish a speaker for the health section of a Homemakers' Conference to be held at the Sherman Hotel, Chicago, in March.

Copies of radio talks and package libraries furnished a number of young mothers study groups.

Cooperation with the Illinois Emergency Relief in

furnishing speakers and moving picture films for the homes for transient men and boys in Chicago.

Respectfully submitted,
Jean McArthur, Secretary.

WOMAN'S AUXILIARY TO THE ILLINOIS STATE MEDICAL SOCIETY

1935 *Annual Meeting*

A most interesting program is being planned for the 1935 Annual Meeting to be held in Rockford, on May 21, 22, 23, 1935. A most cordial invitation is extended to all doctor's wives, whether a member of the Auxiliary or not, to attend this session.

1935 *National Convention.* Atlantic City is the meeting place for 1935 meeting of the Woman's Auxiliary to the American Medical Association, June 10-14, 1935.

Board Meeting. A meeting of the Board of Directors of the Woman's Auxiliary to the Illinois State Medical Society was called to order at 10:30 A. M., January 26, 1935, at the Woman's University Club, 185 N. Wabash Avenue, Chicago, Illinois, the president, Mrs. Lucius Cole, presiding.

There was the usual routine business with reports of officers and standing committees. Each county president is to receive copies of "The History of the First Twelve Years of the Auxiliary" with the suggestion that they be sold for ten cents a copy.

Mrs. Dooley, Chairman of the Convention, gave a tentative program of the Annual Meeting to be held in Rockford, May 21-23, 1935.

The following nominating committee was elected to report at the Rockford Meeting.

Mrs. L. B. Joslyn, Maywood, *Chairman,*
Mrs. R. K. Packard, Chicago.
Mrs. E. J. Meyer, Chicago.
Mrs. H. L. Schaeffer, Cornell.
Mrs. J. R. Neal, Springfield.

Alice M. Joslyn.

THE AMERICAN NEISSERIAN MEDICAL SOCIETY

The American Neisserian Medical Society was founded on June 12, 1934. It is dedicated to the promotion of knowledge in all that relates to the gonococcus and gonococcal infections, that there may be attained improvement in the management of gonorrhea and a reduction in its prevalence. There are 115 charter members.

The society plans to carry out the following program:

A. The scrutiny of the management of gonorrhea in both male and female.
B. Clinical and laboratory research in the diagnosis, medical and social pathology, and the treatment of gonorrhea.
C. Dissemination among the medical profession and the public of authoritative information concerning gonorrhea.

Membership is limited to:

A. Residents of the United States or its territories, Canada or Mexico.
B. Graduates of a medical school recognized by the American Medical Association.
C. Those who are engaged in some phase of the management of gonorrhea.

Invitation to membership is extended to all qualified physicians who desire to work for improvement in the management of gonorrhea. Application blanks can be obtained from the undersigned.

Oscar F. Cox, Jr., M. D., Secretary,
475 Commonwealth Ave., Boston, Mass.

EULOGY OF THE DOCTOR

There are men and classes of men that stand above the common herd, the soldier, the sailor, the shepherd not infrequently, the artist rarely, rarelier still the clergyman, the physician almost as a rule. He is the flower of our civilization and when that stage of man is done with, only to be marvelled at in history, he will be thought to have shared but little in the defects of the period and to have most notably exhibited the virtues of the race. Generosity he has such as is possible only to those who practice an art and never to those who drive a trade; discretion, tested by a hundred secrets; tact, tried in a thousand embarassments; and what are more important, Herculean cheerfulness and courage. So it is, that he brings aid and cheer into the sick room and often enough, though not so often as he desires, brings healing.—Robert Louis Stevenson.

MEDICAL MEN FOR THINGS MEDICAL

The principle that medical men should be the ones to exercise control over medical service is almost axiomatic. Yet there is confusion of thought where there could be straight thinking if all the facts were brought out and faced.

There are those who would virtually make the physician an employee of the state. They fail to recognize the utter incompatibility between the American political system and the methods of truly professional men.

There are those who complain about the scarcity of physicians. Yet it is a fact that while England has 1 doctor for 1,490, France 1 for 1,690, and Sweden 1 for 2,890, there is in the United States 1 physician for every 780 persons.

There are those who denounce our hospitals on the score of high charges for service, but the truth is that the cost per day of a hospital room with meals and the day and night personal ministrations required by an invalid is usually less than a well person would pay for mere room and meals in a first-class hotel.

There are those who would like to let down the bars to self-medication. Yet the fact is that during the last few generations the average span of human life has been extended ten years, chiefly through the discoveries of medical science.

Physicians know these things. They spend years acquiring an education on the care and repair of the most marvelous mechanism on earth—the human body. But they would readily admit that this education does

not qualify them for telling railroad executives how to solve transportation problems or impresarios how to stage an opera. The work of the world needs many kinds of specialized knowledge, but certain it is that each field of work will be best managed by those who know it best.—Mead Johnson & Co., in *Hygeia*, August, 1934.

RECENT PROGRESS IN TREATMENT OF PLUMBISM

According to Irving Gray, Brooklyn (*Journal A. M. A.*, Jan. 19, 1935), the administration of a diet low in calcium and the addition of either ammonium chloride or phosphoric acid definitely causes an increased excretion of lead. The addition of a diet high in phosphorus aids in the excretion of the lead. In several cases of chronic plumbism the lead in both the urine and the feces was increased in amount after phosphate therapy was instituted. Experimental and practical experience bears out Shelling's opinion. The addition of a high phosphorus high calory diet with sufficient vitamin content improved the general appearance; the nutritional requirements were adequate and the rate of excretion of lead was maintained. In the "deleading" treatment of his patients the author is now using the low calcium, high phosphorus diet with a ratio of 1-3 and 1-4. In persons who have absorbed lead it is possible that waves of liberation occur from time to time and produce symptoms of clinical activity. The lead that has been absorbed and is released at certain periods can be much more rapidly excreted at stated intervals with this type of treatment. Although complete "deleading" is not possible, as demonstrated experimentally, nevertheless it is reasonable to assume that the lead excreted is a large fraction of the lead that has been absorbed. The "deleading" treatment may have to be repeated at intervals if there is evidence of continued excretion of abnormal amounts of lead. It is advisable that all patients undergoing "deleading"—treatment be hospitalized. The failure of acute toxic symptoms to develop when there is increased lead excretion is further proof of the fact that there is no parallel between the absorption and excretion of lead and the toxic manifestations. The estimation of lead in the excreta is of aid only in proving whether or not abnormal amounts of lead have been absorbed.

CONTROL OF LEAD POISONING IN THE WORKER

On the basis of his experience Elston L. Belknap, Milwaukee (*Journal A. M. A.*, Jan. 19, 1935), concludes that: 1. The control of lead poisoning by medical supervision is a highly specialized form of work, although it requires the broad background of internal medicine. 2. One must still have a workable course of scientific treatment of lead poisoning to care for workers until the engineers have made lead absorption impossible. 3. A clinically proved and detailed method for the control of lead poisoning in the worker at work is presented, which consists of a stringent preemployment examination by the physician himself, periodic reexamination at least every two weeks to three months, according to the intensity of exposure. Included in the periodic reexamination there must be a record of laboratory studies, whenever a man is reexamined, a hemoglobin and a stipple cell count must always be made and the results on the periodic examination must be analyzed frequently by the medical consultant so that treatment may be changed immediately, if necessary, and recommendations made for further precautions against exposure. 4. One should not wait for disability before one starts treatment. 5. Thoughtless and wholesale calcium treatment may be unwise, but when given advisedly it is of specific aid. 6. Even the so-called insusceptible workers may have relatively large quantities of stored lead ready to be liberated by natural or artificial means. 7. With perfectly controlled technic, in selected cases, artificial deleading of cases previously heavily loaded with lead is a benefit not only to industry but also to the worker, and it is safer than uncontrolled spontaneous deleading.

WHY

(The wail of an exasperated but loyal M. D.)

Oh, when from his nostrums and medical fakes
The "patent" man's fortune immense is,
Oh, what in the world is the reason it takes
Every cent I collect for expenses

Oh, when the gudewife of the opulent quack
Her satins and silks is parading,
Oh, why has my wife but two gowns for her back,
And the best of them dingy and fading?

Oh, when the brigades of fibromatous folk
Are swelling the cancer quack's coffers,
Oh, why am I thankful in caustic to soak
Some verruca that accident offers?

Oh, when, before deigning his patients to ease
His fee in advance the quack collars,
Oh, why do I have, when a patient I seize,
Such a long, weary chase for my dollars?

Oh, when yon galenical humbugs galore
Stroll gaily through rose-fragrant places,
Oh, why do I wander, all worn and foot-sore,
In a desert that has no oasis?

* * *

Because in the days of my youth I was taught
A principle timely and healthy,
And for quackdom's success I've no envious thought,
For I'd rather be honest than wealthy.

—Tommy Dod—*The Medical Age.*

American health was better last year than ever in history, but we dare say the people will never be satisfied until they have enough money to go back to doctoring.—*Portland Oregonian.*

Original Articles

MEDICINE,

The Last Fifty Years and the Next Fifty.

WM. ALLEN PUSEY, M. D.
CHICAGO

On an occasion like this when we commemorate our colleagues whose careers have ended, it may be wholesome for us to revert to the period in which they and we have lived, and in the light of it to consider what is likely in store for those who will follow us. And, so, I propose to speak today on medicine of the last fifty years and of the next fifty.

A wiser man would doubtless be deterred by the second part of my subject. But I approach it in the spirit of an old traveler who is thrilled by the memory of his momentous experience, who likes to talk about the experiences of the road, whenever he can get a listener; to tell of the adventures, of the pleasures and the difficulties and how they were met, to indulge in the privilege of forecast, and to advise future travelers of what they should find and what they should do. If I talk in the first person I am speaking from the standpoint of personal experience.

As student and graduate I have been engaged with medicine now for fifty years. The great achievements of this period have been the establishment of some broad principles which explain the origin of various groups of important diseases, and the practical application of these principles to the management of diseases in these groups. The first and the most important of these is the recognition of the bacterial origin of suppration and of infectious diseases. Bacteriology was just becoming established 50 years ago. Aseptic surgery was feeling its way along; its modern technique and triumphs were to come. Our precise knowledge of the causes of infections has come in this period.

We had had vaccination for smallpox for a hundred years, and diphtheria antitoxin had been suggested but was not established. All of our definite knowledge of immunology and nearly all of its practical applications have come within my professional experience.

Read at Memorial Meeting of Chicago Medical Society, January 27, 1935.

Now we are beginning to make progress in diseases outside the realm of the infections, in the metabolic and degenerative diseases. No one has yet furnished the key to these as Pasteur did to the infections; it is altogether probable that there are many keys that must be found before we can unlock all their secrets; but in these diseases we have had achievements in the last fifty years that are equally startling and almost as significant. I have seen the development of our knowledge of the endocrines, of the vitamins, of allergy, to refer only to fundamental principles which have opened up new fields in medicine.

I have seen the miracle of the control of cretinism, the efficient use of thyroid substance in the treatment of other thyroid disturbances, and the rational use of our knowledge of the internal secretions in many of these diseases.

We have just learned the role in nutrition of those curious substances, the vitamins. We have finally gotten a comprehension of the reasons for food deficiency diseases, and an ability to put this knowledge to practical use, which has given us control of such diseases as rickets, and greatly added to the well-being of children.

We have gotten an entirely new pathological principle in our knowledge of allergic reactions and a clearing of our knowledge of important pathological processes.

These things are increases in our fundamental knowledge. They are not simply uncoordinated new facts of knowledge, but fundamental concepts that involve groups of important diseases. It is not for me to expatiate to you upon the numberless diseases which these new concepts have cleared up and given us new capacity to control. But let me say at least that, for a man without the old experience, it is hard to estimate what the contrast in our knowledge then and now means in terms of health, comfort, and prevention of death. None of us can appreciate the tortures from which man was freed by the introduction of vaccination and anesthesia; it is equally as hard to realize today the relief from suffering which the discoveries of the last fifty years have produced. The agonizing scenes of children's deaths that diphtheria was always causing, the terrible toll that typhoid fever continuously took, the death and the suffering that were the inevitable lot of man that surgery now prevents, the terrifying epidemics of yellow-fever

and cholera that occurred even within my experience—the suffering and the disaster that were then the inevitable lot of man, cannot be imagined today. I have myself seen overcrowded trains of weary, terrified, anxious-faced refugees fleeing from yellow-fever. I remember the terror of a cholera epidemic in my boyhood; I went out of Hamburg only a week before an outbreak of cholera that closed the German ports in 1892, and demoralized North Germany. I have walked the street, unnerved by the scene of a baby's death from strangulation of diphtheria of the larynx, the old membranous croup, which I was powerless to prevent. One must have had personal experience of these horrors to realize what medicine has done in the last fifty years.

What of the social and civil changes in the medical profession in this period?

First, in the doctor himself. In spite of the frequent statements to the contrary, I can remember no correspondingly great change—certainly no great adverse change—in the physician's relation to his patients and his community. He is immeasurably more efficient, and his esteem has not lessened. We hear that specialism has increased and the province of the family doctor been reduced, and there are dire forebodings because of this. I have not seen the change to the ominous extent that we speak of. Fifty years ago I can recall competent specialists in practically every field in which we have them now, except in those departments of knowledge, such as roentgenology, which did not exist then. The specialists played about the role that they do now, and they were, so far as I can see, neither more nor less prosperous and respected then than they are today. Indeed in our thoughts on specialism, as on a good many other subjects, we are probably not seeing facts in correct historical perspective. The times are not as good as they used to be, and never were.

In short, then, it is my impression that in the relations of the individual physician to his patients and the public, there has been little change produced by rapid progress of events within my memory. And I am glad of this for the traditional relationship between the doctor and his patients has long since arrived at a state where it was wholesome and useful and pleasant; as satisfactory as any human relationship, outside the family, in this frail and contentious world.

And I could say hastily, in passing, that I can see no appreciable change in the economic condition of the physician in comparison with others—whether specialist or general practitioner—when it is considered in relation with the varying economic conditions of different periods.

But I am not equally blind to the changes that have come in the practice of medicine in its public and civil relations. Governments have stepped into the field of medicine in ways that were for the most part unexpected and unknown fifty years ago. These interventions have not been altogether unsound or undesirable. The common problems of hygiene and sanitation, of public health, are governmental problems for at least two reasons: they are problems which concern all of the people; and only government have the authority, the resources and the extensive machinery to carry them out on the necessarily large scale. In matters of health which concern the people as a whole we have seen great achievements in the last fifty years.

In the individual care of the sick, the practice of the last fifty years has been that community units, and sons and daughters, and others to whom they might properly look for support, have assumed the burden of dependents. It is the natural and sound course, to put these duties on those to whom they naturally belong. The lot of the dependent, the incompetent and the derelict has never been a happy one; after they have reached the age when they should take care of themselves, nature makes no provision for their preservation either among men or animals. And it is probable that no way can be devised which is better than leaving the responsibility for dependents to those who have direct association and family, personal or community interest in them. From our experience with the personnels of bureaus, which inevitably assume the autocratic attitute of those who have the final word in matters in which they control service, certainly there is no reason to believe that dependents will be handled with more human sympathy or efficiency from the national centers of government, or by employees, entrenched in their positions behind politics or civil service. There has been a growing movement in this direction whose momentum has alarmingly increased in

the last few years, and it has produced a situation which has dangerous possibilities for the good of medicine and those it serves.

Now what of medicine in the next fifty years? First, in its scientific, and, then, in its practical functions.

I have no impulse to make specific prophecies. I do not know when we will find the cause of cancer and its cure. I hope some day we will find a method of treating its tumors with the same assurance that we can now cure the tumors that occur in syphilis. I do not know when we will gain control of the degenerative diseases, of the diseases of the cascular system that now take such a toll of useful people, how soon we will gain victory over many infectious diseases whose causes we know or do not know, of that universal nuisance, the bad cold, of that captain of death, pneumonia, or of such mysterious terrors as poliomyelitis.

But this much we can say, with the advances in medical knowledge and technique in the last fifty years, added to the knowledge of anesthesia which we already had, we finally find ourselves in position to do experimental research under conditions of scientific precision. Thus we are now in position—if temperamental opponents will leave us alone—not only to study with accuracy all of the problems of disease, but to advance our knowledge of the normal and abnormal processes of the body to limits hitherto impossible. There are still, of course, many diseases to be explored, we have still even many infectious diseases that hide their secrets from us, but we have the immeasurable advantage now of knowing what their problems are, and how they are to be approached, and we have the technique for their accurate study. We have reached a favorable strategic position for the fights against diseases; we can wage them intelligently, and we have, as we have always had, the spirit to attack them manfully.

Dr. Langdon Brown, the successor of Sir Humphrey Rolleson at Cambridge, said recently, (B. M. J. Jan. 4, 1935, p-1), "One Hundred and Fifty years ago the need for the collection of data was preeminent. Today there is at least an equal need for the data to be assembled and co-ordinated by careful thinking." We are now in the period of synthesis, where by inductive reasoning from our great accumulations of knowledge of facts we can, from time to time, arrive at fundamental generalizations. It is this situation that accounts for the revolutionary progress of the last fifty years. We are probably now in the midst, if not in the beginning, of this period, and it is probable that many more generalizations with widespread applications are to be expected.

Our present advantageous position for the study of the problems of disease and our recent great victories in new fields are the most hopeful indications for the future. Who would have expected, for example, the sudden control that we have gotten by simple measures of such obscure and hopeless diseases as diabetes and pernicious anemia, of rickets and hypothyroidism? Such successes in the difficult field of metabolic diseases give us justification for the greatest optimism.

The next fifty years ought to be as rich in scientific and technical progress as the last fifty has been.

How fast or how slow will be the future progress of medicine will be influenced by many factors that are beyond medicine's control. It cannot progress much faster than the physical sciences in general. And the progress of these, along with that of medicine, is bound up with the state of society.

For the progress of science requires enduring peace and security for its workers, material resources, and time and opportunity for continuous study and research. These are the products of economic security and intellectual independence. If medicine is to do good work, either in scientific progress or practical usefulness, it must have these; it must offer attractive opportunities to vigorous men who are brought to it by the attractions of independent careers of usefulness in practice or scientific careers.

I know that claims are being made of the advantages to medicine under the new communistic and other forms of autocratic governments that have lately come into existence. I can only speak of conditions in my own specialty. They are definitely deteriorating under these new orders. Medical men are striving in a way that is pathetic to continue their professional activities, but, judging by the evidence that I see, they are trammeled, dispirited and working less efficiently than formerly.

There is more reason for anxiety about the future of medicine in its social and public relations. In a democratic society there is always a tendency to penalize the efficient and prosperous for the benefit of the weak and dissatisfied; to take from the thrifty and give to the thriftless; or to consider it as the socialisticly minded do—to make those who have taken care of those who have not. In the last three years we have seen a rapid movement in this direction that few could have foreseen. We are now in a welter of radical socialistic proposals, and among the first forms of social service always chosen for appropriation is medicine. This is inevitable; for sickness and injury are a source of anxiety to all, the victims have universal sympathy, and every proposal, therefore, to make the state assume responsibility for its individual members would first apply to medical service. It does not matter that medicine is more anxious than anyone else to meet its social and public obligations, and quite as able and more unselfish in doing so. No matter how it points out the sound objections to its socialization, the movement toward it is strong, and will undoubtedly produce effect. That movement we must reckon with and oppose in all of its unsound features.

What of the future of the individual practitioner?

Broadly, I have no doubt that his position will be relatively as good, in comparison with other similar groups in the community, as it has been in the past. His usefulness is too great, he is too thoroughly established by tradition in public confidence to lose the relative advantage of his position, come what may.

Whatever changes may occur in the practice of medicine, I can see nothing to cause the disappearance of or to change greatly the relations of either the specialist or the general practitioner to society.

Because of the enormous elaboration of the details of medicine, as of other sciences, the specialist has a field of usefulness in practice and in research. There has been an increase in specialization in the last fifty years, and yet I do not believe the trend toward specialization has been as great as has been assumed. And I see no reason to believe that this trend will continue to a degree that specialism will occupy a larger place in the profession than it does now. I have seen the statement lately, from a wise colleague, that specialists of an earlier generation were stronger men than those today. That is not my opinion. If I can judge, their character is as good as it ever was, and their competence better. So that, as I see the future, we have reason for believing that the career of the specialist will remain attractive because he is useful. But I believe that whatever trend there is toward specialism has pretty well reached its maximum.

In the same way I think, contrary to the opinion of some of my most esteemed colleagues, that the prospect for the general practitioner is relatively good; I mean by relatively good, good in comparison with that of the specialist and in comparison with that of members of other higher callings. And the best ground for my belief in this is that, in spite of the supposedly strong trend toward specialism, the general practitioner has held his own. And he has held his own because his field has attractions which draw strong men to it, because he supplies a social need that no one else can and that the public recognizes. I see no validity in the arguments that medicine has become too complex for the general practitioner, and that it does not offer today opportunities for scientific exercise of the intellect that the specialist and the laboratory and the hospital doctor have. It seems to me Sir James MacKenzie, in his book "The Future of Medicine", has convincingly answered these arguments. Whatever difficulty has been caused by the increasing complexity of medical knowledge has probably been more than offset by simplifying and rendering practice easier and more effective, whether in diagnosis or treatment. New methods of diagnosis have lightened the labor of many perplexing situations. X-rays, the antitoxins and other therapeutic and diagnostic sera, insulin, thyroid extract and other glandular substances, liver substance, the vitamins—these have made practice simple and effective in diseases not only formerly baffling, but as always where we are in ignorance, troublesome and discouraging in their effects upon the physician. And as we get further in knowledge of this sort, practice will become still easier and at the same time more useful to the patient and more satisfactory to the physician.

As to his intellectual opportunities. No one else has the opportunities for clinical research that the family physician has. As MacKenzie has so forcefully pointed out, the man who is engaged exclusively in research, even though it be clinical, whose practice is confined to the hospital, who sees his patients only in particular illnesses, the laboratory worker, the specialist, are not properly placed for the full study of most diseases. To know the problems of diseases completely one must know patients completely, know all the facts of their personal equations, their environments and lives even before disease begins. To fulfill his highest function the physician must be in position to forestall disease and to see its earliest manifestations. MacKenzie, who has probably done more in increasing our knowledge of diseases of the heart than any other man of our day, is himself a sermon upon this topic. So impressed was he with the importance of these facts as they developed in his experience in thirty years' practice in a small community, that after becoming a great consultant in London, he returned to a town, where he could study disease with a fuller knowledge of all of the factors effecting it.

The general practitioner is the only man who has this opportunity. He need not be embarrassed by the lack of the elaborate machinery of the clinic, or the institute. He needs little of that. In most of his problems the greatest instrument is what MacKenzie calls that "necessary instrument of clinical medicine, the trained physician." (p. 185). Clinical knowledge, particularly clinical diagnosis, is still the most important part of medicine, and the expert clinician the most valuable practitioner. The laboratory has its field, but furnishes no substitute for him.

We hear much of the relative lack of rewards of the general practitioner. Even in material rewards I believe he is not less favored than the specialist. For every outstanding specialist today in the big cities or the small ones, I think I could name his equal in material success among practitioners of general medicine and family doctors. In all ways, I believe, his rewards are as great. The rewards of life are material, intellectual and emotional. As to intellectual and material rewards of the general practitioner, I have already indicated my views. In emotional rewards—and, be as hard boiled as we may, they are important—his life is rich. His usefulness is great and his influence often unique in his community. His value is recognized. He has it brought home to him in innumerable experiences—that best of all thoughts—that he is living a worthwhile existence, and is entrenched in the esteem and affection of those he serves. The specialist, in his casual associations with his patients, has not this experience in anything like the same degree.

The clinic, the corporation practicing medicine, the panel, the krankenkasse, more intervention of government in personal practice, may all come; and still I believe that the advantages that lie in the personal practitioner will insure that he will not disappear—least of all the family doctor. Some of these new forms of practice we already have. Judging from my experience with patients, they only use them now as, what they regard as, necessary second choices.

To summarize then. Given stable economic and social conditions medicine may look to the future with assurance. There is every reason to hope for its continued progress in knowledge and usefulness. If social and economic conditions do not remain stable, medicine's position is probably as secure as that of any group in the community. In this situation it is our duty to strive for sound social and economic conditions for the practice of medicine. It is not for me to discuss how we shall do that. This much I can say, individually we are ineffcient in such a fight; we must do it through organization. Fortunately we have the organization in our national society which is representative of the physicians of the entire country. It and its component societies need the concerted support of the members of the profession; not sporadic support blinded by personal and local interests, but consistent support of enlightened, sound policies for the general good. With that, under vigorous leadership, we can present effective resistance and minimize damage. We can offset the influence of other organizations and groups that, for their own purposes of one sort or another, are willing to cripple medicine as an independent profession. The situation is difficult, but it is not unknown or even new in the experience of the American Medical Association. That organization has had

to meet difficulties from its foundation. It has always found in its emergencies sound public-spirited leadership, and the whole trend of its course has proved to be statesmanlike and in the interests of the profession's and the public's good. We have thrived on difficulties in the past and we have come out more vigorous for having had them. We may not escape unscathed from our present ones, but I am firmly of the conviction that we will come out undefeated, and that medicine will continue for the next fifty years, as it has for the last fifty, as interesting, as vigorous, and as inspiring a calling as men follow.

MEDICAL ECONOMICS

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Within the past twenty-five years the practice of our profession has been almost wholly changed. Discoveries in the basic sciences, applied to the practice of medicine, added a multitude of diagnostic and therapeutic procedures. One result of these advances, with simultaneous social and economic change, has been to significantly alter the relationship of physicians to each other and to the public. Upon the part of the physician, emphasis came to be laid upon accuracy of diagnosis and precision of treatment. These came to be regarded, by physician and patient, not as important adjuncts to the personality of the doctor, a foundation upon which the experienced physician bases his practice, but as the ultimate basis of medical efficiency. The patient learned to look upon medicine as a science. Diagnosis and therapy tended to standardization. The public has noted the success of clinics, large and small, and has followed our own lead regarding the technicalities of specialism. The advantages of group medicine and mechanical aids to diagnosis have been exaggerated, and to many of our fellow-citizens these methods have been magnified because of their own inability to secure them. The present agitation for change in medical practice is partly due to our own emphasis upon the mechanical aspects of our calling. For medicine is not yet an exact science. The practice of medicine is the application of medical knowledge, not to a disease, but to a human being, through the medium, not of a machine, but of another human being.

Long before the crisis which engages us now, these maladjustments became apparent. It is not necessary to quote statistics, easily available as they are, for you and I know that ten years ago, in the midst of prosperity, many patients were denied the privilege of important, often essential, technical procedures of diagnosis and therapy, because of the expense involved. The high cost of medical care was a frequent subject of discussion. Finally a definite move was made to provide data upon which plans might be based for a fairer distribution of medical service, at its best.

In 1927, in Washington, during the annual session of the American Medical Association, an organization was planned to study the cost of medical care. Thus arose the committee about which we have heard so much. This was the result of an original conference which was attended by some sixty representatives, physicians, health officers, social scientists and representatives of the public. The funds necessary for the work were provided by eight foundations. After more than five years' study the report of this committee, which consisted of fifty members, including fifteen physicians in practice (other than those engaged in public health work and in public life) and two dentists, was presented in two main sections, majority and minority reports.

The majority report was signed by thirty-five members, including eight physicians in practice. In addition to recommendations regarding professional education, and recommendations for the study, evaluation, and coordination of medical service, this report contained, in brief, these features:

1. "The Committee recommends that medical service, both preventive and therapeutic, should be furnished largely by organized groups of physicians, dentists, nurses, pharmacists, and other personnel. Such groups should be organized, preferably around a hospital, for rendering complete home, office and hospital care.

2. "The Committee recommends the extension of all basic public health services—whether provided by governmental or non-governmental agencies—so that they will be available to the entire population according to its needs.

3. "The Committee recommends that the costs of medical care be placed on a group payment basis, through the use of insurance through the use of taxation, or through the use of both these methods.

"The Committee defines insurance as a procedure by which a group of persons pay uniform sums of money to meet the costs of medical care' and also 'insists that there shall be a clear-cut separation between insurance to meet the costs of medical care and insurance to cover a portion of the wage loss due to illness.'" Private insurance companies in connection with these plans are decried. "All or nearly all practicing physicians and dentists of the area served would eventually be on the staff of the single center in a small city or the several centers in a metropolis."

Elsewhere it is stated: "Voluntary health insurance has been succeeded by compulsory insurance in most of the countries of western Europe. The use of the state's power of making membership in a sickness scheme obligatory for large groups of persons, increases the population served and also reduces the administrative cost of securing and retaining members. The Committee recognizes that the distribution of the costs of medical care will not become widespread in some communities or for certain sections of the population in many communities, unless there is legislation which makes the distribution of these costs compulsory."

In another connection we read that—"There is nothing in any way mysterious in the relation between a physician and his patient. On the therapeutic side it is capable of completely objective analysis. As to those phases which are not strictly medical, it is of a piece with all satisfactory human relations involving as they do mutual patience, sympathy, understanding and confidence."

Throughout the report there is reference to the importance of maintaining the general practitioner and the personal relationship between patient and physician. No satisfactory plan for the attainment of this objective is presented. The report has been described as "Utopian" which is not unfair. The committee pays the medical profession a high compliment in assuming that groups of men brought together merely because they are engaged in the same line of work in a single comunity will work together in peace and harmony. Some reference is made to the possibility of strife concerning control or domination of the groups, but the constant friction about work which is not capable of being standardized, concerning which minor differences of opinion will often arise, work which must be carried out upon the personal responsibility of one individual whose judgment may not be approved by his colleagues; the inevitable tendency of standardization to suppress individuality, the loss of morale, so common where individual initiative is destroyed; the tendency to finally accept established methods instead of improving them, which means the neglect of research—all are ignored or minimized as posible factors in impairing the efficiency and usefulness of a system of medicine provided by compulsory insurance. The probability that the practice of medicine will become less attractive to young men of talent must also be taken into consideration if adequate medical care is to be provided to those who follow us. Finally, the blight of politics in any form of governmental control is a threat of the first magnitude.

The Minority Report is signed by seven physicians in practice, one in the service of the American Medical Association, and one layman. This group opposes the plan of community medical centers, criticises the attitude of the majority toward contract practice: "The evils of contract practice are widespread and pernicious"—and opposes health insurance, voluntary and compulsory. The recommendations include restriction of governmental activities in the practice of medicine, expansion of governmental care of the indigent to ultimately relieve the profession of this burden, a plea that united attempts be made to restore the general practitioner to the central place in medical practice. The corporate practice of medicine financed through intermediary agencies should be vigorously and persistently opposed. Further recommendations include the trial of methods which may be employed without interfering with the fundamentals of medical practice, the development by state or county medical societies of plans for medical care, and the restriction of governmental activities to the care of veterans suffering from bona fide service-connected disabilities and diseases, except in the cases of tuberculosis and nervous and mental diseases.

At the Milwaukee session of the American Medical Association "The House of Delegates unanimously approved in principle the Minority Report of the Committee on the Costs of Medical Care, and urged that the Board of Trustees

of the American Medical Association, in co-operation with its constituent bodies, conduct an intensive campaign to disseminate this point of view among the medical profession and the public."

The medical press generally opposed the Majority Report. In some instances the report was printed without comment, apparently pending action of the respective state societies. The *Journal of the Medical Society of New Jersey* made this statement: "We have, throughout our preparation of these documents, carefully avoided any expression or indication of personal opinion. Our object has been to supply you with all important facts."

Here and there divergent opinions were expressed. Shortly after the appearance of the report, an editorial appearing in the *New England Journal of Medicine* contained this sentence: "There is abundant evidence that the economics of medical practice are in an unsatisfactory state, and that constructive intelligence coupled with imagination must plan and experiment in this field of service if better conditions are to prevail." The *Nebraska State Medical Journal* for January, 1933, commented editorially, thus: "Our first reaction to the report was that it would exert a tremendous influence in favor of state medicine; mature later reflection has modified this considerably. Few physicians are in favor of state medicine as found in European countries. Most physicians see the need of some better method of caring for the poor and the white collar class. . . . Is it not possible that out of this study and from the recommendations made may develop a policy entirely wholesome to the profession and the laity?"

The approval of the Minority Report given by the American Medical Association implies approval of experimentation in the field of medical economics within certain limits. The Minority Report includes a recommendation that careful trial be given to methods "which can be rightly fitted into our present institutions and agencies without interfering with the fundamentals of medical practice," and "the development by state or county medical societies of plans for medical care." After stating eight safeguards which must be observed in the development of such plans, it is stated that "This group recognizes the value of trial of plans based upon the above principles by county medical societies." These recommendations, upon the action of the Council at the Milwaukee session, became the accepted policy of the American Medical Association. The essential feature in the program of our national association is the retention of medical control over any system designed to change or significantly modify present procedures. Already plans have been put into effect in various localities in attempts to solve the problem of medical care. Only recently the *Springfield Republican* commented editorially on the "Detroit Plan": "There will be wide interest in the progress of the new 'Detroit Plan' for medical service, which, after seven months' trial in that city, gives promise of much usefulness." . . . "Under the Detroit Plan five professional groups—physicians, dentists, nurses, pharmacists, and hospitals—are co-operating through representatives at the headquarters of the Wayne County Medical Society, chief sponsor of the plan." The Milwaukee County Society projected a plan for a type of sickness insurance which attracted attention, but was not put into effect. According to Dr. Fishbein—"Contract practice, industrial practice, hospital insurance plans, university practice, lodge practice and group clinics are a few of the many forms of medical care now available in various communities."

According to a statement of W. T. Foster, made early this year: "Since the publication of the Report of the Committee on the Costs of Medical Care, the State Medical Society of California has approved the plan (the Majority plan) and group practice has spread all the way from Los Angeles to Seattle. In Portland—a very conservative city—170 doctors are now operating under the plan which we advocate: in Seattle over 300 doctors."

The Committee of the New York State Medical Society to consider the final report of the Committee on the Costs of Medical Care, reported against health insurance, but a recommendation to provide a plan of hospital insurance "To lessen the burden of nursing and hospital care for the wage-earning group, a group of people below the comfort-line" was approved by the House of Delegates.

In February, 1933, the *West Virginia Medical*

Journal said editorially: "We do feel that in some sections where there is an unquestionable demand for some health insurance plan, the doctors and hospitals would be wise to go into the matter openly and frankly and work out a satisfactory solution before someone else works out an unsatisfactory plan. There is no reason why any county society should hold aloof from such a move."

In 1933, at the Annual Conference of Secretaries of Constituent State Medical Associations, Dr. F. C. Warnshuis of Grand Rapids, reported the Survey of Michigan's Medical Services and Health Agencies; his paper contains these words: "We are not in a position to approve any insurance plan. We are fully cognizant of the inherent dangers. We realize that some plan must be devised to enable the lower bracket income persons to obtain adequate care. We are firm in the belief that any plan eventually approved must have the following safeguards: free choice of physician, benefits to be those of medical care only, no third party promotion profits, and control vested in the profession. Whether a plan so safeguarded and efficient can be developed is now receiving intensive consideration."

In view of our close relationship to our neighbor, Canada, the changes in the practice of medicine there are of interest to us. "In November, 1932, the Executive Committee of the Canadian Medical Association instructed 'that the Committee on Economics be authorized to prepare a plan or plans for health insurance, and that these be passed to the various provinces for their consideration, criticism and suggestions. This work is well in hand. In 1933, thirty-seven rural municipalities in Saskatchewan were being served by a full-time municipal physician." . . . "The British Columbia Medical Association presented their views to the Royal Commission on State Health Insurance . . . they advocate a system of compulsory contributory state health insurance, providing a complete medical benefit, with freedom of choice of doctor, all legally qualified medical practitioners being eligible to participate in the scheme."

The Majority Report contains much discussion of European schemes for sickness insurance, and reprints the conclusions of Simons and Sinai, four of which read thus:

"1. There is practically no important opposition to the principle of health insurance in any country where it now exists. There is criticism in plenty and constant effort to change details, but no agitation for repeal.

"2. The National associations of physicians and dentists have over and over formally approved the provisions of health care to the lower income classes through insurance.

"3. There is practically unanimous agreement that the insured receive better medical care than they did before they were insured.

"4. There is wide variation in professional incomes under insurance: but these will average at least as high and probably somewhat higher than they were in private working-class practice before insurance."

Many and widely varying opinions might be quoted concerning sickness insurance. Evans, writing from Germany, says: "there is little doubt that an insurance system with its legal intricacies and opportunities for unfair exploitation, and with the vast organization which is necessary for its control, is more expensive for the community than a system in which the relations between the patient and practitioner are direct. . . ." One German writer says of the system in his country: "Insurance dishonesty is widespread, extends even to self-mutilation and infects everything that comes within its range. This will remain until the wings of the communistic angels begin to sprout between the shoulder blades."

The *Bulletin of the American Medical Association* for June, 1934, contains this summary regarding sickness insurance:

"1. It is not a measure of prevention against disease. Even the most enthusiastic defenders of the British system admit its failure in this respect.

"2. It does not meet the problem of caring for the indigent sick.

"3. Advocates admit that insurance is least needed for minor diseases; but once established, the major share of its resources are largely directed toward the care of those least in need of assistance.

"4. Insurance does not reduce the amount of disease or perceptibly affect mortality.

"5. There is no evidence that insurance in any country has reduced the costs of medical care."

The Committee of the New York State Medical Society to consider the Report of the Committee on the Costs of Medical Care reports: "It has been manifestly apparent whenever compulsory health insurance has been put into practice that 1. The mortality has not decreased; 2. The average days' illness has increased from

seven to seventeen days; 3. There has developed a huge amount of industrial neuroses; 4. Malingering often reaches such extensive proportions as to call forth governmental reactions; and 5. There has been no corresponding increase in preventive medicine."

Henry Sigerist, a German, now Professor of the History of Medicine at Johns Hopkins University, writes: "The German sickness insurance is far from perfect. It could be greatly improved, as no doubt it will be. Deficient as it may be, it has served the people's health well for half a century, and no European country that has adopted a sickness insurance plan could ever afford to abandon it."

In spite of the widespread criticism of the profession, most of us have clung to the belief that the public desires the retention of the private physician. There are evidences that we may not count too confidently upon the disposition of the community to resist state medicine. The public was restive about the cost of medical care at the height of our prosperity, and the desolation of the past five years has probably not led to a lessening of that attitude. To the man who formerly could afford the best of medical care, but now can really afford none, our regard for the traditional ideals of the profession may savor of smugness and self-interest. The far-flung activities of various groups in their opposition to present medical practice has intensified this feeling and aroused many people to criticism of the profession and demand for change. Dr. William H. Ross, a former President of the New York State Medical Society, says: "Apparently, the public has lost its fear of experiment in government. Social control over industry seems inevitable, and social control of medical services may be the next step if the organized profession persists in its stand-pat position instead of undertaking leadership in the formulation of plans to provide medical care for those who have not means enough to pay for it."

There is a lack of proper medical care for large portions of our population. The care that is given to the indigent in such abundance is far from satisfactory. Many of the people now accepting such care recall the days when they were served by private physicians, and resent the type of medical attention provided and the associated implications of indigency. Those who have known better times may now readily agree that private practice is an injustice to the community in general, because it supplies better service to the man with means to procure it. If the present chaotic economic condition continues, failure on our part to meet the needs of these people for adequate medical care may be responsible for increasing agitation in favor of some form of state medicine.

There now exists in Chicago an organization for the provision of medical and dental care, which is an open challenge to the private practice of medicine. Organized some two years ago, directed by an experienced administrator, manned by a group of capable and well-trained young men, their bridges burned behind them—one obvious purpose is to demonstrate that the methods of modern business, including advertising, are applicable to the practice of medicine. This group, now outside the local society, defying our organization, is attracting a large number of patients and rendering service at very low prices. Prior to the action of the Chicago Medical Society it was made clear that the organization would not abandon lay advertising. The Society representatives were rightly adamant in supporting the time-honored and essential ban on such advertising. The continued activities of this organization have created unrest among physicians. If the organization continues its present success, it is likely that other organizations will arise to offer competition, and the consequent rivalries may wreck profits for all. In the meantime, there is unrest amongst many of our members. Similar groups may be started by other physicians, partly justifying themselves upon the basis of the Society's failure to protect them. Younger men may be tempted to find their place in practice in such a way. The situation may be aggravated within a few years by the increasing number of graduates in medicine, who may, unless conditions notably improve, find the opportunities for even a living practice steadily diminishing.

On the other hand, conditions are not altogether in favor of the success of this undertaking. There is no provision for medical attention in the homes of patients; it is not probable that attractive salaries can be offered as the men now employed grow older and more experienced; the enthusiasm for a new venture may be

dimmed by the outlook for a stationary professional status. The very intensity of criticism now directed at the institution stimulates good work on the part of those involved; the routine, the lack of opportunity to advance in a material or professional way, the necessary restriction of research activities, may dim enthusiasm. If such organizations multiply they are likely to affect materially the practice of medicine, as now conducted. One reason alone justifies this statement: the pay clinic is remunerated for its services: fees are collected promptly and indigents are not attended. With such a system the private physician, often giving his services free, and remaining unpaid for much work, presumably lucrative, cannot compete.

The provision of medical care through dispensary service has been the source of much discussion, often acrimonious, through many years. Since the onset of the depression so many people have been unable to pay for medical service that the dispensaries have been fairly overwhelmed. These patients are so obviously unable to pay that criticism, formerly directed at dispensaries as responsible for competition with the private practitioner, has almost been stilled. The problem has not been settled, it only presents different aspects. Now the private practitioner has lost his clientele because of the latter's poverty, to fellow physicians who were attending dispensaries for the purpose of teaching. For four years this latter group has found the teaching hampered by the immense increase of patients who must be treated. The private physician has lost his patients and his income therefrom; the physician in the dispensary has the patients, but without any remuneration. It is a striking commentary on the public attitude toward the medical profession that for three years this situation went practically unchallenged. For these patients, food, clothing and shelter were provided; these commodities were paid for. The physician alone was unpaid; in the public mind he gives only his services. In New York State the "State has assumed the burden of supplying medical service to the destitute. Both law and the decisions of the courts have recognized four necessities of life, food, clothing, shelter and health. The State must purchase this service from those who have it to sell. The doctor who donates his services to the destitute makes a gift to the taxpayers rather than to the poor."

The second paragraph of the Minority Report recommends that "Government care of the indigent be expanded with the ultimate object of relieving the profession of this burden." Rules and Regulations No. 7 of the Federal Emergency Relief Administration issued in 1933 provided "A uniform policy with regard to the provision of medical, nursing and dental care for indigent persons in their homes, shall be made the basis of an agreement between the relief administration and the organized medical, nursing and dental professions, state or local." Elsewhere occurs this statement: "When a program of medical care in the home for indigent persons has been officially adopted, participation shall be open to all physicians licensed to practice medicine in the state, subject to local statutory limitations and the general policy outlined in Regulation I." For some reason, the Relief Administration in the Chicago area has not provided for the physician of the family's choice to take advantage of this opportunity to earn a pittance, but has confined this practice to a group, large indeed, but not including all those who are entitled to such recognition, of some 1,600 physicians who registered for the work. As noted above, the obvious intent of No. 7 is that "participation shall be open to all physicians."

It ought to be relatively easy to combine a system of care for the indigent as outlined in No. 7 with dispenary co-operation to the advantage of all concerned. Allowing the needy to be treated at home by their own physician would spare these people many long and tiresome trips and much waiting on benches, would materially lessen the demands upon the dispensary, and would permit many physicians to earn some much-needed cash. The dispensaries could be used as consultation centers at the request of the physicians, and still would be supplied with all the patients needed for clinical teaching.

In July of this year, $97,065 was paid to physicians (of the 1,600 registered) in Cook County under the provisions of Regulation No. 7. During this month there were 142,252 families "on relief." Sixty-eight cents per family (and the families are computed as averaging slightly over four) as a monthly charge for

medical service in so large a group is indicative of excellent health if any large proportion of the sick were referred to their family physicians. It is not unjust to suggest that work which should have gone to the private physician under the provisions of Regulation No. 7 was largely cared for in dispensaries. If so, the intent of Regulation No. 7 was defeated: work intended to relieve the needy physician and to help him to retain his hold upon his clientele was diverted from his hands to free agencies. The physician carrying on under trying conditions is entitled to fairer treatment. Unjust treatment will, in the long run, impair the efficiency of many men, discourage and dishearten them, and may lead eventually to a situation in which the medical needs of the community cannot be met. The executives of the Social Service Agencies and the numerous subordinates are paid.

Fundamentally, the opposition which confronts us and challenges the present practice of medicine is based upon the fact that large groups of our people have not been provided with adequate and satisfactory medical care. This lack was accentuated by the depression. Advantage has been taken of the situation by those opposed to the private practice of medicine to conduct an intensive agitation in favor of radical change. We are faced with the problem of providing better care for the people, as a whole, or of submitting to change in methods of practice, more or less radical. This will be done by us, with or without us, or even in spite of us. Large numbers of people now doing without medical care or accepting charity have broken their ties with a family physician. It is for us, with open minds and a willingness to accept change, to devote our attention to retaining the good will of the community (which is our most valuable asset) while preserving the essentials of our methods of practice.

If we permit the necessary reform to be directed by men who charge us with selfishness, the changes may be radical indeed. The mood for change is everywhere. Radical changes in political and business lines have been carried through with popular approval, because the public believes the advocates of these changes are unselfish and disinterested. If we permit the lay advocates of medical change to array themselves in like garments and take their position as unselfish leaders, while we remain only in opposition, we will shortly find ourselves ignored in the development of any plan.

An appeal to politics for special enactments to protect our system of practice or for special favors of any kind will only involve us in more discredit, and whenever the politicians consider the situation favorable, in further exploitation of the profession. It is to the credit of the profession that our political activities have included the promotion of public health, the improvement of medical education, the protection of the community from ignorant irregulars and patent medicine vendors, the establishment and improvement of sanitary measures, the care of certain chronic diseases, preventive measures against blindness, and various other services, but our position will be different if we ask the retention of the present status of the profession merely because we want it. Probably no single fault of our form of government is more conspicuous than the tendency of organized minorities to support evil men on the single issue of a minority interest. Many of us will not accede to vote for this or that man merely because he has made certain promises to the medical profession. Let us not forget that our position in the community is not due to our education or ability, the schools we come from or the way we live. The physician is honored for his traditional disinterested devotion to his work. If we put the emphasis on the economic phases of practice, the public will take us at our word. Our disputes with the public will be settled upon the basis of an economic quarrel. Likely enough, the economics of medical practice as conceived by economists, sociologists and legislators will be imposed upon physician and patient. If we convince the community that the acceptance of socialized medicine would destroy the morale of the profession and hamper medical progress, would take away the intangible interest in the patient as a person, what changes are made may be effected gradually, without radical upsets. We must make clear that our conviction of the superiority of service rendered by present methods of practice is based upon our experience with the sick, and our concern for the sick. No substitute for the personal relationship between the patient and physician will long prove acceptable.

True enough, the physician must live. From

his professional work he must derive his support. In doing his daily work, his daily living must be considered, but the public will grant these rights willingly if we can solve the problem of satisfactory service. If we continue to leave masses of people to more or less haphazard care, the medical profession will continue to suffer financially, and ultimately the problem may be solved in a way which will substitute for "Organized Medicine" an organization of medicine under the beneficent direction of the party in power.

In connection with the subject of political activities, passing attention may be directed to certain expressions of an organization devoted to the consideration of medical economics. There is a demand that "Unethical Medical Advertising be abolished by law"—in other words, that the legislature of the state enact a law forbidding any man to practice medicine in defiance of the trade association rules under which he and his fellow physicians have agreed to work. The state is asked to undertake to regulate the professional relationship of the physicians, which would be State Medicine with a vengeance. The second and third objectionable sections of the program are those which advocate "Patronage of the Friends of Organized Medicine" and "Utilization of Political Potentialities of Organized Medicine." If the first of these two, by any chance, refers to the possibility of organized attempts at a boycott, it cannot be too strongly condemned. The implications of the second have already been discussed. If we are misled into attempting to force our demands upon the community we are undone. Our one hope of maintaining for the public and ourselves the superior service and advantages of the private practice of medicine is to maintain the idealism of medicine, retain as our primary objective adequate care to all the people, and seek as individuals and as an organized body to make clear to the public that our aim is the public good: in all conscience we believe that a standardized mechanical organization of medical service will not provide adequate care, care which would be satisfactory to the mass of our people.

Sydenstricker says: "Under the American economic system the distribution of purchasing power is so unequal that even in most prosperous years, and even if foresight and thrift were common characteristics of human beings, a very great majority of the individual families is unable to provide against these emergency needs for medical service." If this is true, our problem is difficult indeed. If medicine is now so complex, so dependent upon skill expecting large rewards and expensive mechanical devices, that large portions of our people cannot meet the expense of illness, it must be admitted that change is imminent, for large sections of our population will not submit to permanent deprivation of the means of health. The private practice of medicine is dependent upon the maintenance of our present economic system, with a fairer and wider distribution of wealth. Any material modification of the capitalistic system will, almost certainly, involve the profession in notable change.

SUMMARY

1. The private practice of medicine is best adapted to good service, principally because it stimulates personal interest in the patient and promotes a feeling of good will between patient and physician. It develops initiative and encourages medical advance.

2. Under the conditions which have developed during the past twenty-five years, private practice has not adequately served the needs of the community.

3. Changes in medical practice are inevitable; if comprehensive changes are effected, these will doubtless be incompatible with the maintenance of an ideal relationship between physician and patient, with consequent deterioration of service.

4. An intransigent attitude on the part of the medical profession is likely to consolidate and harden those who are anxious for change, and to irritate many who are not now opposed to the private practice of medicine If such an attitude results in the loss of public confidence, radical changes may be expected. Our political organization, with units of cities, townships and counties, presents opportunities for experimentation with various schemes through which we may find our way to a larger measure of public approval.

5. It is the part of wisdom for us to guide rather than to obstruct. The mind of the public is now open to change; mere obstruction is obnoxious; let us keep in mind the purpose

which is the basis of all our work, help for the patient, and frankly consider many things, approving those which promise better service. It is our problem to convince the public that the medical profession, as now constituted, is capable of initiating and completing the adaptations and innovations necessary for the provision of adequate medical care.

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UNSATURATED FATTY ACID (Vitamin F) DEFICIENCY

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Until recently, fats were not considered essential elements of the diet from an energy standpoint, but the work of Burr and Burr[1] and McAmis, Anderson and Mendel[2] manifestly discloses a new deficiency disease of far reaching nutritional consequence and of utmost importance to a newer medical interpretation of many symptoms heretofore vague and of unidentified origin.

Carefully executed experiments showed that if all neutral fat were excluded from the diet, but compensating amounts of fat-soluble vitamins at present known were returned in the form of essentially non-fatty concentrates, animals failed to grow properly. A syndrome of symptoms appear which include; scaliness of the skin (resembling eczema and dermatitis of unexplained origin and highly resistant to usual treatment); a swelling of the tip of the tail which eventuates finally in necrosis; a marked accumulation of dandruff in the hair on the back of the neck (not at all unlike the scales that accumulate in seborrheic dermatitis); alopecia; irregular ovulation in the female; failure to mate in the males; hemorrhagic spots and sores over the skin surface; hematuria, albuminuria and marked kidney lesions; cessation of growth; death. Animals in whom the deficiency is produced eat the same amount of food but drink twice the amount of water as normal controls, a symptom suggesting involvement of the posterior pituitary.

Before the animals reach a moribund condition, supplementing the diet with a small amount of linoleic or linolenic acids, or preferably both, results in the complete extinction of all the symptoms. Not only do these unsaturated fatty acids, and perhaps others, completely cure the fat deficiency symptoms, but if they are contained in the diet they prevent the appearance of the deficiency syndrome.

Evans and Lepkovsky have confirmed the evidence for the deficiency disease,[3] and refer to the essential unsaturated fatty acids involved in the prevention and cure as vitamin F.[4]

As is usual in the beginning study of newly opened nutritional investigations, conflicting reports appear. Sinclair[5] agrees with the findings of Burr and Burr in so far as stunted growth is concerned but was unable to elicit the other symptoms. Graham and Griffith,[6] Hume and Smith,[7] and Funk, Caspe and Caspe[8] obtained findings differing somewhat from those of Burr and Burr. We have found no difficulty in procuring similar results to those reported by Burr and Burr by following merely the instructions so clearly outlined by Hawk and Bergeim.[9]

Achard, Grigaut, Leblanc and David[10] investigated the relation between infections and blood cholesterol. They reported that in infectious fevers, the blood cholesterol value first falls, then, on convalescence it rises to values which may even exceed the normal. At the same time, the iodine number of the fatty material of the blood falls at the beginning of an infection and rises with convalescence, but very slowly. It is recognized that the iodine value of a fatty material expresses its degree of unsaturate content, high iodine value corresponding to much, low iodine value indicating little, unsaturated fatty acids. Thus, in infectious diseases, the power of the organism to desaturate fatty acids, ascribed very largely to the liver, appears to be lowered. This was found to be true even in the case of such mild infections as common colds, according to Okey and Boyden.[11] In a laboratory with diversified interests carrying a total personnel of 63 people, it has been interesting to observe a rather prevalent incidence of common colds during the past season among the workers in all departments but one. The department having to do with the handling and study of linoleic and linolenic acids, having about a dozen workers who consume considerable linoleic acid preparations freely and for which they develop a natural liking, has not yet shown a single case of common cold, although in years previous to undertaking this special work, these same workers were as regularly visited with colds as those in the other fields of work in the same laboratory.

A routine examination of the blood on numerous laboratory workers has shown a drop from the normal in the iodine value of the fatty materials, this drop anticipating the appearance of a common cold by several days. Those in whom no attempt was made to correct this condition by feeding liberal amounts of linoleic and linolenic acid concentrate later developed colds; but on quickly restoring the unsaturates in the blood to their normal value, colds did not appear. To be sure, the observation is not sufficiently controlled by exhaustive experiment and study to warrant any sweeping generalizations. However, a closer study of the amount of blood unsaturates may do much to afford a therapeutic control of convalescence from acute infections. It may even point the way to the prevention of simpler infections, such as the common cold, and it is not impossible that the exanthems stand in some co-related manner with unsaturated fatty acid dyscrasia. At least, our observation has been profitable from the viewpoint of preventing the usual loss of experimental animals (white rats) suffering from "snuffles." In our colony of over a thousand white rats, we have this year prevented the appearance of "snuffles" by small doses of linoleic and linolenic acid concentrate.

Hansen and Burr[12] and Hansen[13, 14, 15] have shown a very striking relation between the deficiency syndrome in animals and infantile eczema. First, Hansen has shown that infants in the acute phase of infantile eczema have a lowered unsaturated fatty acid content in the blood. Next, that linoleic and linolenic acid sources, such as linseed oil, corrects the skin condition clinically, while at the same time, the unsaturated fatty acids of the blood climb to a normal level. Hansen's work on infants followed the report of Hansen and Burr's work on the studies of the iodine absorption of serum in rats fed on fat-free diets. The orginal contributions should be consulted for further particulars. Hansen's work on eczema has received some measure of additional confirmation by the work of Cornbleet and Pace reported recently.[16]

It is interesting to observe the relative unsaturated acid potentialities of maizeoil, as used by Cornbleet and Pace, and other sources of linoleic and linolenic acid unsaturates employed by other investigators. The following tabular comparison is made from data furnished by Jamieson[17] and is reliable.

TABLE 1

	Linseed Oil	Maize Oil
Iodine Number (degree of unsaturation)	178–182	124–128
Linoleic Acid (prevents fat deficiency syndrome)	48.5%	39.1%
Linolenic Acid (prevents fat deficiency syndrome)	34.1%	Little, if any
Oleic Acid (does not prevent fat deficiency syndrome)	5.0%	43.4%

Commenting editorially, the Journal of the American Medical Association recently discussed Diet and Relief.[18] It referred to Mendel as pointing out that there are definite epochs in the evolution of diet. These epochs, the editorial states, are due partly through the introduction of new foods, to changing habits and methods of work, and to the sophistication of food substances which tends to deprive them more and more of such essentials as vitamins, mineral salts and the like. In this connection it is interesting to note a growing food custom that directly violates physiological knowledge, but about which very little is said even when brought to the attention of interests whose position is that of safeguarding public health. Reference is made to the increasing use of hardened or hydrogenated fats, and in many instances, of the replacing of fat by the nutritionally harmful mineral oil.

Writing on the nutritive value of fats, an important government representative and authority on the chemistry of fats and oils, but not necessarily an authority on the physiological values of these substances, points out that vegetable fats as a rule contain but small quantities of fat-soluble vitamins A, D, and E. After refining and deodorization, they are usually devoid of these vitamins. "In this respect alone" continues the author, "they are inferior to those which contain them. This deficiency is of no importance to those living under ordinary conditions, because they receive ample quantities of vitamins from other foods eaten. When desired, a vitamin concentrate from other sources can be added to fats or products manufactured from them, and this is being done in certain cases." When it is considered that refining, sterilization and further sophistication of foodstuffs is taking place at the same time in all other edible fields, the force of this statement is considerably lost. Hence the growing popularity of vitamin concentrates. But more important, the authority says nothing of the rising tide of saturated fat consumption in the form of butter substitutes,

shortenings and the like. Hydrogenation of fats renders them more indigestible, as Langworthy and Holmes[19] proved; deprives them of important vitamins, and lessens their content of unsaturated fatty acids whose specific function it seems to be to prevent fat deficiency disease.

Leathes and Wedell (1909) performed rather conclusive experiments which point to the fat desaturating function of the liver. So important is this work in relation to our changing dietary as to merit reproducing verbatim:

"In order to account for the special position taken by the liver as a receiving organ for fat which has been transferred from the reserves, we should consider what is known of the subsequent history of mobilized reserve fat. It is certainly oxidized in tissues where energy is set free, and no less certainly it must be used for repair of the fatty components of the protoplasmic fabric of cells, including the myelin of the nervous system. For oxidation, it is possible that the fatty acids are readily available if they have unsaturated linkages at which oxidation can take place, and so give rise to lower fatty acids; these we know that the organism can by Beta-oxidation convert into acetoacetic acid, and thus into carbonic acid and water.

"But also, if required for purposes of repair, the fatty acids must in part acquire new unsaturated linkages; for the iodine value of the mixed fatty acids, obtained from cells other than those of adipose tissue, is invariably higher than that of the fat in the reserves or in the food, and, indeed, higher than that of oleic acid, the only unsaturated acid commonly present in any quantity in the food. The iodine value of the fatty acids in the cells of the organ is such as would be given by a mixture of oleic and linoleic acid in about equal parts, but, since saturated acids absorbing no iodine are present together with unsaturated, either linoleic acid must constitute more than half of the total amount of acids, or there must be acids more unsaturated than linoleic present, with three or more double linkages. Now, it is not in accord with what is known of the functions of the liver to suppose that higher fatty acids are, in any great amount, completely oxidized there. The liver is not an organ like the heart or kidney, whose functions involve the transformation of chemical energy on a large scale; and its blood supply is largely venous. If more of the reserve fat is taken up by the liver than by the heart and kidney, it seems that the liver cannot require it for its own use, but must do something with it to render it more suitable for the uses of other cells. Whether the uses to which these cells put it are oxidation for energy or repair of an essential component of their own protoplasm, as we have seen, new unsaturated linkages appear to be required. Is it possible that it is in the liver that these are introduced?

"Experiments were done which seem to show that this must be so. Rats or cats were fed on food containing cod liver oil or the flesh of herrings, into the composition of which acids with a very high iodine value enter. The fatty acids subsequently found in the liver of these animals had an iodine value that was still higher than that of the mixed acids of the oil or fat that had been eaten. This might be accounted for by supposing that those fatty acids to which the high iodine value of the fats contained in the food was due, acids with three or more double linkages, were taken up by the liver more readily, or, having been taken up, were less readily disposed of than other acids more completely saturated with which the liver commonly has to deal. But there is other evidence which makes the explanation which was originally put forward more probable, namely, that some of the acids had had new unsaturated linkages introduced; the acids in which this occurred being probably those of the stearic and oleic acid series present in the mixture presented by the fish oils, and present also in the mixtures of acids that occur in the fats of the animal's usual food. The other evidence in favor of this explanation is the proof given by Hartley (1909) that the liver of the pig contains an oleic acid different from that in lard, the reserve fat of the same species of animal. In lard the oleic acid is the common acid with the unsaturated pair of carbon atoms exactly in the middle of the chain, as Hartley showed by oxidising it with alkaline permanganate and isolating pelargonic acid. But from the pig's liver the unsaturated acids obtained were an oleic acid that, treated in the same way, gave caproic instead of pelargonic acid, and a dicarboxylic acid with 12 carbon atoms instead of azaleic, which, in the oxidation of lard, though it was not isolated, was presumably formed together with the pelargonic acid; and, in addition to this new oleic acid, a linoleic acid that, on oxidation, gave caproic and acetic acid, the latter derived from malonic acid. In this linoleic acid, therefore, the double linkages were one in the middle of the chain, and the other three places further from the carboxyl group. The hydroxyl acids obtained from these two unsaturated acids by oxidizing at a low temperature agreed with this view of their constitution. In the pig's liver then two acids were found, neither of which exists in lard, one of which would be formed from the stearic, the other from the oleic acid of the pig's reserve fat by the same change in both cases, the introduction of a new unsaturated union between the sixth and seventh carbon atoms counted from the methyl group as the first. If the same change had been effected in the stearic and oleic acids of the fish oils, by the livers of the cats and rats in the previously mentioned experiments, this would account for the iodine values found in the acids of those animals' livers.

"We have thus seen that it is common for the liver to contain fat that has been transferred to it from the fat depots, commoner than it is for other organs, and in far larger amount than other organs; and from the consideration of all the facts we are led to interpret them provisionally in this way: when fat is called up for use, it is more particularly the liver that, in the first instance, normally deals with it; in the cells of the liver it is prepared for the uses to which it is to be put in the body generally by desaturation of the fatty acids."

Thus, the normal function of the liver is in part concerned with the desaturation of fats the better to meet the requirements of the various cells of the body abounding in unsaturates; and contemporary food trends, through the large scale introduction of vitamin-depleted, fatty-acid extinguished fat supplies, directly violate and oppose the physiological activities of the body. In some instances, the substitution of mineral oil for fat has taken place. Added to the proved vitamin-depleting property of mineral oil, about which innumerable references have appeared in excellent publications, and its absolute valueless nutritive property due to its lack of absorption by the organism, there seems to be no heed to the lurking carcinogenetic property of mineral oil, which has been quite repeatedly mentioned in unbiased medical literature, but with equal regularity ignored. This perverted and denatured fat supply, fed liberally to the children and adults of a nation in place of the former vegetable oils expressed naturally and unmodified, make the findings of Burr and Burr take on a new significance of which practitioners of medicine may well be aware.

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THE SURGICAL TREATMENT OF RETINAL DETACHMENT

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Gonin first used thermocauterization for treatment of retinal detachment in 1916, and in 1923 reported on this method. In 1925 he reported five successful cases; in 1928 he reported upon twenty-six more following single cauterization of a small retinal tear. His reports, publications and presentations led to the widespread attempt to use the cautery method by many distinguished ophthalmic surgeons. Limitation of space will not allow mention of the many thorough reports that have followed. We must also remember that Addario first used a similar cauterization technique as far back as 1889.

At the International Ophthalmological Congress in Amsterdam in 1929, Gonin reported on one hundred cases, and in 1932 he again reported on a total of three hundred cases. Of course, many other forms of treatment have been reported upon during this time such as the method of Colmatage by La Grange, the method of Sourdille, spontaneous healing, bed rest, use of tuberculin, puncture method, injection of sodium chloride, injection of sodium chloride and magnesium sulphate. Other methods also consisted of injection of Dionin and atropine, venesection, drainage procedures, use of Jodôl, Jontophoresis, thermophor, vibrations, cataphoresis and injection of rabbit vitreous, etc.

The foundation of the cauterization method is based on the assumption that detachment of the retina is secondary to a hole or tear in the retina, the closure of which results in healing. Gonin believes that the altered condition of the vitreous results in the formation of retinal tears, probably on account of adhesions between vitreous and retina. Nutritional disturbances in the vitreous may lead to retraction of the vitreous structure. Thickening of the vitreous consistency results in epithelial cell proliferation and connective tissue formation which may cause traction and result in formation of tears in areas where adhesions or choroiditis is present. The exudate from the choroid is secondary. The original cause is an equatorial choroiditis and possi-

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bly other disorders in the anterior eyeball segment, which are associated with age and myopia. When the retinal tear is present, vitreous seeps through behind the retina and the latter becomes detached. The presence of a tear is, therefore, the assumption for the formation of a retinal detachment.

The frequency with which tears are found varies with the investigators reporting, but the percentage becomes much greater as more cases are accurately examined. Deutschmann first reported the presence of tears in 17.4% of his cases. Gonin later reported the presence of tears in 95% of his cases. The presence of vitreous opacities may easily hinder or make impossible the finding of a tear, while haphazard and unskillful examinations may also preclude the observation of same. The shape of the tear varies. It may be round, triangular, horse-shoe shaped, crescent-shaped, slit-like, or irregular. The concavity or base of a retinal tear is always directed towards the periphery of the retina. The flap is pushed toward the vitreous. The tearing out of a flap reveals that it is not due to pressure from a retroretinal exudate. Multiple tears may be present in about one-ninth of the cases. The size of the tear varies between 1/5 and 12 P. D., according to Gonin. Single tears at theora serrata may even be larger.

The tear is most usually located on the temporal side, less than half are situated on the nasal side. Twice as many tears occur in the upper as in the lower half, so that, therefore, most tears are usually situated in the superior-temporal region. The tears are usually situated in a small area of the retina, about 7 mm. in width, located between the equator and ora serrata. Disinsertions at the ora serrata usually occur in the lower temporal region, and are noted in 10% to 25% of the cases examined. They are closely associated with a history of trauma, and usually occur in emmetropic eyes.

The Technique of Gonin. The past history, previous eye diseases, general physical findings, and thorough examination of the eye in question are of the utmost importance. After intensive pupillary dilatation the exact findings are marked out diagrammatically. The drawing should include the ora serrata and the equator. This may necessitate intensive study over a period of several days. Occasionally it may be simplified by absolute bed rest for several days to allow the retinal folds to recede backwards. Following the use of Lindner's "hole-spectacles" for a few days, a better view of the entire retina may be obtained. The form and size of the tear is carefully noted, and compared in size to the size of the optic disk, the diameter of which is approximately 1.5 mm. The site of the retinal hole is calculated in terms of disc diameters from the ora serrata, the axis being designated by degrees from 0-360, or according to the clock hands. The exact meridian is tattooed upon the eyeball with India ink or gentian violet at the limbus opposite the tear. If this is in line another tatto mark diametrically opposite the first is made at the limbus near the tear. At time of operation a thread of silk is knotted at site of the first pigment mark, passed over the center of the cornea to the second pigment mark so that its prolongation crosses the site of the retinal hole. The distance of the ora serrata from the limbus is next marked off with calipers, 6-7 mm. in emmetropic and 8-9 in myopic eyes. This distance is added to the calculated distance that the tear is situated from the ora serrata and the spot marked with a light cautery mark or a trephine turn. The distance from the ora serrata to the equator is approximately 6 mm. Other methods of localization may be used, such as the localization ophthalmoscope, perimeters with various attachments, etc.

It is wise to prepare the patient beforehand by administering an enema, and using a mild hypnotic such as allonal, amytol, nembutal or evipan. Various forms of blood coagulants may be used before operation if hemorrhage is feared.

The eye is anesthetized with cocaine 4% instillation at four minute intervals until four drops have been used. Novocaine 2% is injected subconjunctivally over the site of the operative field, or if desired, retrobulbar injection of same may be used. The conjunctiva is incised with a semicircular incision over the area to be cauterized, and if any extraocular muscles obscure the operative field, they may be pulled aside with muscle hooks or guide sutures, or resected at their insertions and sutured in place again after cauterization is completed. The latter procedure simplifies the technic. The operative field must be kept dry and all bleeding controlled with

adrenalin 1-1000 instillation and frequent sponging.

The silk guide thread is placed across the tattooed points and over the retinal tear region, and the exact distance of the tear measured from the limbus along the thread with a curved rule or calipers. When the exact point is accurately located, a Graefe knife is carefully thrust through the sclera for a few mm., depending upon the amount of elevation of the retina, and turned 90° to allow escape of the subretinal fluid. The hot Paquelin cautery is immediately inserted through this opening for a distance of several mm., and removed after two seconds have elapsed. The conjunctiva is now sutured and the guide threads are removed. Atropine 1% is instilled and a binocular bandage is applied.

There is practically no difference in the end results reported by the various investigators in comparing the results when a Paquelin cautery or an electric thermocautery has been used. Vogt has used the latter in his series of cases and believes more of the operative field is accessible with this instrument. Of course, the electric thermocautery cools quickly while the Paquelin does not.

Absolute bed rest of at least five or six days is essential after the operation. The dressings should be changed daily. Ophthalmoscopy should not be attempted before the third or fourth day. The patient may be allowed out of bed on the eighth day and should be given a pair of Lindner's "hole-spectacles" to wear in order to keep the eyes as stationary as possible.

If the cauterization has been unsuccessful, it may be repeated on the ninth or tenth day; in severe cases as early as the sixth day following the first attempt. The object of the operation is to completely close and seal the retinal tear itself, so that the retina will reattach itself of its own accord when the causative factor is removed.

The ophthalmoscope reveals the end result as a round or oval white area with black border, possibly surrounded by small hemorrhages on about the sixth day. The coagulated mass of vitreous recedes during the following three weeks so that a yellow scar with considerable surrounding pigment results. This light scar may be from two to three times as large as the original observed.

The complications may consist of a vitreous hemorrhage, usually six to ten days after operation, following absorption of the coagulated blood vessels. There is also a destruction of the surrounding retina as mentioned by Lindner. The retina may not only become atrophied, but it may be shrunken or shortened. It may even become necrotic. Atrophy of the eyeball and infection may occur. Neuritis and papilledema may also occur all too frequently, as may cataract formation. The first case performed by the author in the autumn of 1929 resulted in reattachment, but the vision was interfered with by the formation of a cataract four months later.

Chemical Treatment of Retinal Detachment (Guist-Lindner). In 1930 Lindner decided to investigate other methods than the use of the Paquelin cautery on account of the many complications that had occurred. Guist at this time had performed a series of cases using potassium hydroxide to form adhesions between the retina and choroid.

The technic of Guist and Lindner is very time consuming, but has none of the dangers that opening the eyeball and the use of the Paquelin entails.

The preparation of the patient is the same as for thermocauterization.

Following preoperative medication and retrobulbar anesthesia, careful dissection of the conjunctiva is made to give enough exposure to the sclera, and if found necessary, the over-lying muscle may be incised and displaced out of the operative field. The trephine openings are made with either 1.5 or 1.7 mm. diameter trephines, and the holes are spaced one mm. apart. The trephine may either penetrate or almost penetrate the sclera, but it must not injure the choroid. The scleral button is fixed with forceps, slightly elevated and freed with a keratome. The trephine openings are then touched individually with a sharp pointed potassium hydroxide stick for thirty seconds, and immediately neutralized with a cotton applicator moistened with ½% acetic acid. The KOH stick must be frequently dried, otherwise it dissolves very easily and may cause a destruction of too much scleral tissue. As many as twenty trephine openings may be cauterized. After all the openings have been cauterized, several are perforated with a dull pointed sound to allow a release of the subretinal fluid. Blood vessels must be avoided.

Complete bed rest is essential following the operation. Binocular bandage for two days, then monocular. "Hole-spectacles" may be worn on the eighth day. Complications consist of perforation of the choroid, in which case the opening must be closed with a suture. In case of hemorrhage occuring, the operation is interrupted temporarily until it is controlled, or ended entirely and repeated at a later time. At the area of cauterization there results a grayish-white discoloration of the retina, later hemorrhages and exudates, and after several weeks pigmentation. Healing is complete only after three or four months. The operation is very time consuming, as often as much as half an eyeball must be trephined. The operation is not indicated in vesicular detachments, especially when large. Post-operative hemorrhages are usually not serious, especially when the retina is again in place. The most serious post-operative complication is necrosis of the sclera, which usually results in an atrophy of the eyeball. (Four times in three patients of Guist, 1932.)

Statistics regarding this technic are not voluminous. Gonin himself believes the operation may be indicated in cases where the retinal tear is very large and the use of a thermocautery is not deemed sufficient; also in cases where the exact location of the tear cannot be localized.

Hessberg has combined the technic of Guist, Weve and Meller by encircling the region of the tear with a series of trephine openings, encircling these with diathermy applications to the sclera and occasionally touching the scleral fibers remaining in the trephine openings and finally puncturing several of them.

The Guist method is advantageous because it is not absolutely necessary to localize the tear, and the retina is not further injured. No contraction of the retina occurs. One should attempt to avoid any intraocular hemorrhage. Disadvantages consist of the great amount of time entailed and the difficulty of the procedure. In place of the KOH stick, Lindner has tried the use of 6%, or 3%, and later 4% KOH solution, to avoid action upon tissues other than the choroid.

For macular tears, Lindner advised trephination at the equator, undermining of the choroid from here to the macular region, followed by the careful insertion of curved cannulas and the application of 6% or 3% KOH solution directly to the macular region.

The use of other chemicals have been tried, but KOH is probably the best. Oxcyanate of mercury 5% is also useful. Deutschmann has used Tr. of iodine in the trephine openings as well as in flat incisions of the sclera.

Diathermy (Weve, Larsson). Although the chemical method gave very good results, it is very difficult to make so many trephine openings only up to the choroid, without doing more damage. In the early operations, the use of the KOH stick resulted in unnecessarily severe cauterization of the tissues. In 1930 Weve first reported in a Holland publication the use of diathermy to seal the retinal tear. A little later in the same year, Larsson reported his method of diathermy, which he had already used for several years. Weve tried his method as an improvement over Gonin's especially in cases where the latter had failed, large or multiple tears, tears at the ora serrata, where it was impossible to find a tear, cloudy media, etc.; cases where a closure of the tear by thermocautery was impossible.

The equipment consists of a machine with fine graduations for a weak current. Inactive zinc plate electrodes of 15 x20 cm. are applied to the arm. The active electrode consists of a needle with a metal head of 3.5 mm. diameter. Wound retractors are made of bent glass hooks. The field of operation is exposed as previously noted, and must be kept thoroughly dry. There must be no bleeding of tissues. The electrode must be sterilized beforehand as it does not become hot. The current is 100-150 M. A. If a needle is used, the highest current is 50-60 M. A. Coagulation is produced until the sclera becomes dry. The applications to the sclera are made several millimeters apart until the area of the tear is circumscribed. If the detachment is flat no puncture of the retina is indicated, if not, puncture is made with a needle or the thermocautery. Binocular dressings for several days. The tension is at first reduced, but rises later. The retina first becomes reattached after one week. To fasten tears one may make multiple micro-coagulations, especially in the region of the serrata tears, with a needle electrode which perforates the sclera for a distance of 3 mm. This is easily done when the current is on. This method of diathermy does not interfere with the function of the surrounding tissue, as is evi-

denced by the visual fields later. Weve's technic now consists of the use of a unipolar current of 50 M. A.

Larsson's method is identical, but he uses an electrode of 1.66 mm. diameter and a current under 100 M. A. The current is closed for five seconds. Several areas of sclera are touched and a trephine opening is made opposite the greatest elevation to allow loss of subretinal fluid. Exact localization is not necessary. Hemorrhage is not frequent. Vitreous hemorrhages are common but absorb readily. The retina becomes reattached five to eight days after operation. White areas are formed at the region of the coagulation.

Diathermy Puncture (Safar). This method is characterized by the use of a needle insulated up to 1.5 to 2 mm. from its point, which by aid of its heat is forced through the sclera and cauterizes only the choroid and retina. An attempt is made to close the tear. The preparation is similar to that mentioned for the previous types of operation.

The electrodes consist of small brushes with an isolated handle and base or plate containing several 1.5 to 2 mm. steel needles which protrude. The plate is placed on the cleanly exposed sclera, the current is applied, released, and the brush removed. The shape of the electrodes vary. The needles are spaced 1.8 mm. apart. Five to eight needles are on a plate. For more posterior application, the handles are bent. With these electrodes a rather larger area of tissue can be treated, and loss of fluid is avoided by allowing the plate to remain in place. Injury to the macula has not been noted, and early operative interference is indicated. The subretinal fluid is removed by means of a blunt cannula. Absolute bed rest is indicated following operation. The early conjunctival chemosis readily recedes and the inflammatory reaction is very slight. At the point of application are noted cloudy grayish-white areas, which later become clearer, followed by the formation of small foci similar to that seen in old choroiditis. These changes occur as a rule between six to eight weeks.

The complications have been glaucoma and vitreous hemorrhage.

The Method of Sourdille. This consists of scleroretinal punctures in the region of the retina in the hope that a marked reaction of the retina occurs, so that adhesion between the retina and choroid occurs. The punctures are made with a fine sharp Graefe knife, usually 2-4, about 1 mm. deep to be certain to strike the retina. No account of the presence of tears is made. Through these punctures the subretinal fluid escapes, also the fluid in the vitreous caused by the choroidal initation.

The reaction is produced by galvano-cauterization with a fine burner, which attacks the retina. In marked detachments the reaction may also be produced by subconjunctival injections of 1-2 c.c. oxycyanate of mercury solution (1-1000). The reaction must work upon the entire surface of the detachment. The postoperative treatment consists of fourteen days absolute bed rest. On the tenth or twelfth day, five or six electrolytic punctures through the sclera are made using a current of 2-3 M. A. Subconjunctival injections of hydrargyri oxycyanati 1-5000 or 1-3000 are made.

The object in the aforementioned methods is to produce a mass of scar tissue posterior to the tear, so that when the subretinal fluid drains off, and the retina returns to its normal position, the hole will become occluded. The Gonin puncture is a drastic operation, which further traumatizes an already too frequently degenerated vitreous, producing a mass of scar tissue in the various coats of the eye, with frequently resulting secondary tears. Furthermore the cautery must hit the tear, and this is the difficult part of the procedure. More than one cautery puncture may be necessary in large or multiple tears, while in the other methods the extent of cauterization is so large that exact localization is not entirely essential. The Guist and Larsson methods are essentially outside the vitreous chamber and no loss of vitreous should occur. On the contrary, the Guist-Lindner method is very tedious, time consuming and extremely difficult as the danger of perforating the choroid is always present. The Weve and Larsson methods of diathermy possess all the advantages of multiple trephining without the attendant disadvantages, are simple in procedure, not time consuming and require a technic so simple that it is within the domain of every ophthalmic surgeon.

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DISCUSSION

Dr. O. B. Nugent, Chicago: Dr. Meyer did not mention, I believe, the use of the Walker needles which are made of iridoplatinum, and each needle is of proper length so it just allows for coagulation of the choroid. Each needle is placed in position with a cannula and there is a silk thread fastened to each needle so one is able to map out the portion of detachment and then make as many punctures as he needs. When you are all through you remove the needles one at a time. The best results I have had have been with these Walker needles.

I use 225 ma. long enough to pass the needle all the way through the sclera. As I turn the current on I press the needle through the sclera and as soon as it is through I turn the current off, this coagulates the tissue and causes the iris to adhere to the choroid. The tension is just as high when you finish the puncture as when you make the first; there is too much drainage and the eyeball is too soft to finish the operation properly when all the coagulation is done with the same needle.

DIPHTHERIA IMMUNIZATION IN PRIVATE PRACTICE

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Medical literature for the past several years is replete with articles and statistics on the ways and means of immunizing an individual against diphtheria. Most of these reports deal with thousands of cases immunized in schools, institutions and large city wide campaigns, but little is given to us of the work done in every day practice in the private life of the physician.

Physicians' Responsibility. We are indebted to such men as Zingher, Park, Behring, Ramon, Schick and others for the original investigations, development and perfection of proper diphtheria preventive measures. They have done their work chiefly in research laboratories and in public institutions and have handed down to us highly refined and positive means of protecting our patients against this communicable disease. Are we as physicians accepting this responsibility? Do we do our part and continue to educate the public along diphtheria preventive lines? The physician-patient relationship is bound to differ from the institutional worker's relationship to the patient. In the first instance we as family physicians are immunizing individuals as against mass immunization. We are asking a fee for our services whereas the institutional patients are receiving their protection for nothing. We are called upon to explain reactions and results; how long will the protection last; what is the best age to begin immunization; what is the best material to use and is the final Schick test necessary. These and many other problems must be met by the physician in private life and it was with such questions in mind that I undertook an analysis of diphtheria immunization in private practice and am presenting the work here today.

Analysis of Immunization. The figures presented include immunization of 503 individuals from six months to twelve years of age, extending over a period of three years. Both toxin-antitoxin and diphtheria toxoid were used. No Schick tests were done previous to immunization on children under seven years of age and a personal letter was written to each parent six months after the last immunization dose was given, impressing upon them the necessity of a final Schick test.

Use of Toxin-antitoxin. Three injections of 1 c.c. each of toxin-antitoxin at one week intervals were given to 143 children of this series. Of this number 117 returned for a Schick test and 17 were Schick positive.

Use of Toxoid. The remaining 360 children received a total of 3 c.c. each of diphtheria toxoid, 1 c.c. being given at each visit, two weeks apart. After six months 300 of these children returned for a Schick test and 100 per cent. were negative. In both groups the Schick tests were interpreted on the fourth day after the injection and in the event of a doubtful reading a control was done: The local or constitutional reaction to either toxin-antitoxin or toxoid was negligable.

Further Analysis of Figures. A further study of these figures revealed some interesting facts. Of the 503 immunized children only 26 were six years or older when they received their first injection. Of the 86 children who did not return

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for a Schick test all but 4 were over fifteen months of age when the Schick was done. It is much easier to have the parent return with the child while he or she is still under two years to have the final Schick test done during some routine office examination that it is to wait until school age, which such office check-ups are less frequent and necessary.

Analysis of the Schick Positive Cases. The following table gives us an analysis of the seventeen children who were Schick positive after immunization with toxin-antitoxin.

ANALYSIS OF SEVENTEEN SCHICK POSITIVE CASES

10 were six years or older when the Schick was done.
6 returned and were given three toxoid injections with a subsequent negative Schick.
2 had their tonsils removed and were Schick negative six months later.
1 had had diphtheria before toxin-antitoxin was given.
3 were re-Schicked two years after the original test with no further injections and were negative.
2 groups of two sisters were positive.
11 of the original 17 were rendered Schick negative.

Review of Diphtheria Cases. A review of the cases of diphtheria that I have seen in private practice in the past ten years showed that 55 per cent. were under three years when they contracted the disease and three had previously had toxin-antitoxin, but no follow-up Schick test. These two facts again bring out the necessity of early immunization a final Schick test.

Method of Conducting Diphtheria Immunization Campaign. Before I conclude this paper I should like to say a few words relative to the way diphtheria immunization is handled in Winnebago County. Four years ago we physicians in Winnebago County realized that it was our duty to make the public diphtheria conscious. We felt that education should best come from the physician and immunization be done by the individual physicians and not by the health commissioner or school physician. An intensive educational campaign was conducted with the wholehearted cooperation of the local and state health authorities and school officials. Newspaper advertising, radio talks and addresses to Parents and Teachers Associations formed part of our program. Every physician entering in this campaign set aside a definite hour each week for a prescribed period as a special clinic hour, at which time he took care of his own patients at a reduced fee. Cards were properly filled out and when completed sent to the local health department for permanent records. No free immunization was done by the health officer or school physician, each doctor taking care of his own charity patients when necessary. This program has been in effect for four years with various modifications when the occasion arose. The people are now becoming diphtheria minded, so that immunization is not only carried on during the annual diphtheria campaign but probably more extensively throughout the year as a part of a routine office practice and the physician-patient relationship, of which we hear so much, is actively maintained. It is my feeling that an annual immunization campaign keeps the public diphtheria conscious and stimulates the physician to keeping up a perpetual diphtheria immunization educational program.

Diphtheria Rate in Rockford from 1923 to 1933 Inclusive. The following table shows the results of our campaign.

Year	Cases	Deaths
1923	80	9
1924	44	2
1925	24	1
1926	23	1
1927	21	2
1928	37	2
1929	93	5
1930	96	8
	campaign started	
1931	24	0
1932	17	0
1933	8	0

CONCLUSIONS

1. In the series reported 3 c.c. of diphtheria toxoid proved to be 100 per cent. effective in immunizing children against diphtheria.

2. The best age at which to start immunization is from six months to one year.

3. A final Schick test six months after the last injection is imperative.

4. Diphtheria immunization is best carried out by the family physician in his own office as a part of a perpetual educational program.

DISCUSSION

Dr. Archibald Hoyne, Chicago: This paper emphasizes the fact, which cannot receive too much consideration, that it will not do simply to have known preventives for some diseases and then fail to adopt them. When we look back and consider that there has been an absolute preventive for smallpox for nearly 150 years, yet millions of people have died from the disease during that time, perhaps we may be inclined to congratulate ourselves on the headway made in campaigns of diphtheria prevention. In large cities it is probably not as easy a matter for the family physician

to be persuaded to take the interest which Dr. Woodward has reported in the city of Rockford. If the family physician fails in this respect, why, naturally, the work must fall on the Public Health Department. It does seem, however, that the method described by Dr. Woodward is the ideal one. The family physician properly is the one who ought to immunize the patients in his community. Beginning immunization as early as six months of age has at times been questioned, some thinking it too soon to start, believing that a later period should be selected, maybe from nine months to one year.

In view of the statistics that we have seen here this afternoon, it would look as though there is no question but what that period in the child's life is a perfectly proper one.

Another point which Dr. Woodward brought out particularly is the necessity for doing Schick tests. There is no doubt that a great many physicians, certainly in some of the larger cities where they undertake to immunize children, do not follow up with the Schick test. Consequently they are not certain they have actually immunized the patient and for that reason the family may be living under the false idea that the child is protected from diphtheria, whereas in reality it may not be. Therefore, whenever any immunization is undertaken, the Schick test should always be done afterwards to be certain that the operation has been successful.

In Chicago a great deal has been done along the line of immunization. As illustrative of this, I might mention going back for a period of five years that in 1929 at the Municipal Contagious Disease Hospital there were 1460 cases of diphetheria admitted with 163 deaths. Last year, 1933, there were but 97 cases of diphtheria admitted with six deaths. This does not mean that the hospital there admits all of the diphtheria patients but the admissions are a good barometer of the diphtheria prevailing in Chicago. This decline in hospital cases is indicative of what immunization against diphtheria can do.

I think that Dr. Woodward and the city of Rockford are surely to be congratulated on the remarkable success they have achieved; especially in view of the fact that all the work has been done by the private physicians and not been dumped onto the Public Health Department, as is frequently the case.

Dr. C. A. Earle, Des Plaines, Ill.: I, too, want to congratulate the doctor on the large number of immunizations that he has done in private practice. I never have been convinced that children above four or five years of age really ought to be given a dose of toxoid or TA without a previous positive Schick test. I shall attempt to show that more skin testing ought to be done. The profession must practice it more extensively. People must and will become test minded. It is now more than twenty-one years since Theobald Smith—may his tribe increase—suggested the active immunization of children by means of a mixture of diphtheria toxin and antitoxin. The history of medicine cannot show a more convincing procedure for the prevention of a serious disease than the work of Smith on the guinea pig, which led to his memorable recommendation for the use of TA mixtures in the prevention of diphtheria. For years it was known that diphtheria was the same in the guinea pig as in the child. Even today, as then, this squeaking little animal is the measuring rod for the strength and potetency of diphtheria toxin and antitoxin. Park used such mixtures in horses to speed up antitoxin formation. Finally, Behring, without mentioning Smith's work, announced his TA mixtures. Then followed the work of Park and Zingher in children. Many of you probably remember Zingher when he attended a medical meeting he always carried a Schick testing syringe and toxin with him. He would stand at the door of the room and offer to test the doctors as they came out of the medical meeting. Excepting the elaboration of diphtheria toxoid, we know no more of diphtheria prevention than we did twenty years ago. Yet how slowly the medical profession took it up. I have been reminiscent, old age is also presumptive, hence you will pardon me if I take a glance into the future, dim though my vision may be; I predict that other tests for other diseases and other procedures for immunization against other diseases will be elaborated. Even now besides the Dick test there are skin tests for tularemia and for some of the dermatoses and that baffling disease, undulant fever, and in the treatment or in gauging the treatment of certain types of pneumonia. The Mantoux test will be as common as the Schick test. Skin tests for susceptibility to whooping-cough and active immunization against this disease are just around the corner. Whether this skin game—I mean this skin testing game—will ever be as lucrative as the tonsillectomy or the appendectomy game, I don't know. But I do believe that the very existence of the general practitioner of the future will come largely from the practice of preventive medicine. Will he be alert? Will he take more medical journals and keep abreast of the times? Will he grasp and appropriate every new and sound procedure for disease prevention? If he does not, the State will.

Dr. Woodward, (closing): I want to thank Dr. Hoyne and Dr. Earle for this discussion, and again emphasize what I feel is the importance of early protection because of the fact that it is so much easier to get the parents back for the Schick test, and also, if the physician is alert to his responsibilities, that he will educate more parents to have their children actively immunized against diphtheria.

THE ROLE OF THE X-RAY IN INDUSTRIAL HYGIENE

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During the past few years, especially since the beginning of the depression, there has been a tendency toward increase in the number of suits for damages by employees against employers.

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This increase has been found in all forms of industrial injury and occupational diseases.

A statement published by the Ohio Industrial Commissionair in the Ohio Industrial Commission Monitor, September, 1932, states: "Due to the liberalized interpretation of law laid down during the period of the depresion, constant and intensified effort on the part of a great many claimants and their representatives to employ every known avenue for reopening of old and all but forgotten claims, seeking to restore thousands of one time injured workmen to compensation benefits, appeals to the courts have grown in astounding numbers and, without legislative remedy, the scope of the drainage upon the available funds is problematical."

This condition is not confined to Ohio alone but is prevalent throughout the entire United States.

One of the most likely etiological factors is, first of all, the reduction in employment along with the unrest of the populace in general. Many of the employees have had employment which enabled them to participate in a fair standard of living. The great majority of these individuals did not provide for the rainy season and when employment ceased, so did the bread and butter.

People in this state of mind are easily influenced by the cohorts of shady attorneys. They are led into court as the sheep to the slaughter. These individuals are lead to believe that they are sick even if they are in good health generally. A smooth-talking, high pressure attorney will promise them damages, far exceeding the probable amount. The only requirement insisted in is that they follow the attorney's instructions. It is an easy thing to sell a person a scheme or racket of this character, and many of these individuals eventually believe that they are entitled to damages. If they were not ill to begin with, it is almost certain that before they have completed the procedure to which they are subjected, they will at least have a headache. The majority of them feel that they are suffering the tortures of the damned from some disease or injury incurred from their occupation; consequently the dockets of the courts are filled with suits for damage incurred from industrial injuries and occupational disease.

Probably the greatest number of cases have developed in occupational diseases in relation to the chest, particularly pneumoconiosis with its several divisions as silicosis, anthracosis, analine dye irritation, etc.

This particular situation has driven the insurance companies to cancel their industrial insurance on a number of different kinds of manufacturing, such as those which include grinding, molding and all branches of industry that have dust hazards. This phase of the situation has driven the employers to some oasis whereby they can secure a form of insurance that will protect them from the ravages of the misdirected employee.

It is impossible for the smaller manufacturer to assume his own liabilities, for the reason that if he were to have a suit for damages amounting to several thousand dollars it would probably cause him to lose his business, especially in times like these.

A few of the insurance companies have decided that they are willing to take the risk of placing insurance with manufacturing concerns who have an occupational hazard, if they can be satisfied that the employee is not, at the time of issuance of the insurance, suffering from one of the forms of latent disease or antecedent disease that may be aggravated by his or her employment. These conditions have been legislated to be allowed compensation if it is shown that they are excited to activity or aggravated to any degree. Therefore they demand of the employer an examination that will satisfy the medical departments that any disease, occupational or otherwise, does not exist to be aggravated by the present occupation. As an instance, any pulmonary pathology might be construed as being caused or aggravated by an occupation. It is necessary to rule out all forms of chest pathology. For example: An employee having tuberculosis in any stage should not be permitted to work in a position which would have a tendency to cause irritation of the mucous membranes. An individual with heart or aortic-changes should be guarded against occupational strain.

There is no better method of obtaining permanent records of normal or pathological conditions of the organs of the body than the preserved x-ray films of any part of the anatomy. A comparison of x-ray examinations over a given period of development or recession of a disease excels

any other form of physical examination. For it can be visualized at its various stages and comparisons are most exact. These records can be preserved over a long period of time and can be examined as frequently as necessary under the same conditions by a number of different individuals. Physical examinations can also be recorded, but it is impossible when a difference of opinion exists at some later date to actually have the patient before you under the identical condition to settle the dispute. Different impressions of the physical findings are quite frequent, while the x-ray films record only those conditions that exist. A comparison of films has already proved its worth in some of the cases when pre-entrance examinations have been made and reported by Dr. Bohart for the Belt Line Railroad. These examinations were of the spine alone.

An x-ray examination of the chest is the most reliable means of determining the changes of a chronic inflammatory process such as is found in the several divisions of pneumoconiosis. This film can be retained as a permanent visible record of the existing changes, if any; and if a disease develops during the employment of an individual who has a recorded normal x-ray it would be a much easier process to establish the causative factor and responsibility. The insurance companies have adopted a rule requiring this kind of procedure before insurance will be issued to manufacturers having occupational hazards. Furthermore according to a report of the American Railway Association, out of a total of 1,192 back examinations 798 variations and diseases were found that were not detected by physical examinations. The insurance companies demand that these examinations will be made by a reputable radiologist of their choice. If these examinations are carried out along proper lines and the records are properly filed and preserved, I am of the opinion that the end will be most gratifying to industry at large and that insurance companies will be well repaid for their efforts along these lines: also that the employee will benefit, since deserving employees will not be inconvenienced by costly court procedures and it will not be necessary for them to give a great part of their compensation to so-called ambulance chasers. In fact, it is my belief that in a short period of time the same procedure will be carried out in other fields of the x-ray, especially in examination of bones. It is thought that all lines of industry having occupations hazardous to bones, will eventually require a complete x-ray of the bony skeleton before accepting an employee and, should there be existing previous injury or some congenital variation of bone, a non-contestible record of this fact will therefore be available. It is an established fact that there is as much if not more compensation paid for existing congenital deformities, hypertrophic bone changes, and other existing bone deformities than there is for actual traumatic lesions or occupational diseases.

Data gathered from the members of the Chicago claim agents of all class A railroads entering Chicago, indicates the number of claims from personal injury to employers have decreased 76 per cent since 1923. This is apparently due to the intense Safety First Campaign which has been carried on by these companies. But quoting another paragraph from a letter by the secretary of this organization, he states:

"On the other hand, I am of the impression, and quite a few of the other railroad claim men agree with me, that we have had in the past few years of the 'depression' more litigation involving questionable cases or cases entirely without merit than at any time during the last decade. In other words, there has been an increase in cases where the disability was not due to trauma or had no connection with trauma, although in some of these cases it would be hard to prove the line of demarcation between trauma and disability from disease. In these days of 'hard times' employees suffering disability usually try to figure out some way that the disability can be linked up with an accident. We have had a host of cases wherein hernias are just being discovered and the person afflicted claims it is due to a strain or overlifting or something of that sort at some time in the recent past, although no report was made of the alleged 'accident' at the time it actually occurred."

At the present time it is hard to convince an employer to spend a sum possibly aggregating twenty-five dollars for each employee as an entrance examination since this amount would appear entirely prohibitive to him. However, if insurance companies refuse to insure the employees and the employer has a few large damage suits fastened on him, it will be a much simpler task

to convince him of the economic advantage of a thorough entrance examination.

I have been fortunate during this time of financial distress in having some of the insurance companies refer cases to me for chest examinations for existing pneumoconiosis. It was especially interesting to see the amount of existing pathology that was found in the chest of unsuspecting individuals. The pathological changes in the majority of these cases could easily be made a basis of law procedures although few, if any of them were actually due to occupation. However, if damage suits were entered, they would be very difficult to defend.

In one series of cases, an industry manufacturing stoves, in which there are many occupations considered very hazardous for the several forms of pneumoconiosis, three of the employees had a suspicious pneumoconiosis, or only three per cent. who had any suspicious x-ray findings of this disease. On the other hand, many of the chests presented evidence of pathology all of which were probably contracted from other sources than their occupation. It is possible that the great majority of these diseases existed prior to employment unless the firm happened to be one of very long standing and the employees had been with them for a long period of time.

Other evidences of pathology found was as follows:

Tuberculosis	3
Gun Shot Wounds	1
Pleurisy (Chronic)	9
Hearts (Enlarged)	1
(Mitral Disease)	2
Aortitis	6
Calcified Glands	4
Penumoconiosis (Early first degree)	3

Assuming that in the majority of industries, this is the average of individuals who have some of the before mentioned conditions existing, that, it will be readily seen if they were influenced to sue their employers for occupational injuries or disease, the cost of defending the cases alone would so far exceed the original cost of examination that there would be no comparison. One adverse decision in the courts would increase this percentage many times.

Aside from the fact that the employer can be protected from the ravages of the unscrupulous lawyer by this form of examination, it also enables the conscientious employer to place his employees in positions which are not hazardous to his constitution and which enables them to guard their health better and to continue as wage earners for a longer time. If an individual with some existing pulmonary pathology, contracted from some source other than his occupation, should continue in a position where there is a dust hazard, his condition would in all probability be aggravated; if he were given some less hazardous work with a better chance for his recovery much could be accomplished both for the employee and the employer.

It seems to me that we as physicians and radiologists are doing our part in promoting this phase of our profession, which certainly cannot be construed as anything but beneficial to the public at large, in both an economic and hygienic way. It is a field which I believe will expand, in that all industries that now require physical examination will eventually require some kind of an x-ray examination in connection with the physical to obtain a permanent record of the employee's state of health at the time of entering employment. This would not only protect the employer but it would be far reaching in its effect on the employee. It would enable those responsible to place an employee in an occupation in which he would be shielded from hazards, which would not tend to aggravate an existing disease or to develop some other condition from occupation which might be predisposed by an existing variation from the normal.

There is no doubt that a certain proportion of the individuals who are employed at the present time would be, under conditions as I have outlined, cast aside. For this reason a program outlined for employment according to the individual's physical ability to carry on under the proper hygienic measures would be frowned upon by a certain group. I believe, however, that eventually these conditions would have a tendency to correct themselves and employment in the proper walks of life would be available for all.

SUMMARY

Owing to the changes in the industrial world which have placed a different conception on physical examination of employed individuals, and following in line with the trend for better hygienic surroundings for the employed along with a tendency to eliminate racketeering in regard to the physical hazards of the employed, it places a responsibility on us, as physicians and radiolo-

gists, to promote a program that will eventually lower insurance rates for the employer; take away fees from unscrupulous lawyers and produce more revenue for the radiologist.

DISCUSSION

Dr. T. D. Cantrell, Bloomington: I have nothing but commendation for the paper. The valuable permanent records would no doubt forstall many suits and be of benefit to both the employer and the employee. The examination must be complete and thorough so as to show any former injuries and any anatomical irregularities that render the laborer especially liable to disability due to usual strains.

I wish to call especial attention to the fifth lumbar vertebra. We sometimes find the lateral processes attached to the bones of the pelvis in such a manner as to immobilize the sacrovertebral joint. If such attachment becomes loosened so as to put a strain on the unused joint, pain on standing, walking or any labor will persist for at least five years or until a new joint is established.

I have also noticed neglected fractures of the body of the fifth lumbar vertebra with only ligamental or fibrous union which seems to carry the body weight on the ordinary work of life, as on a farm, but will not support the body in the erect position indefinitely. I found some in military service that could not withstand the hardship of drill and on x-ray examination were discharged from the service after months of punishment for malingering. These conditions cannot be diagnosed except by careful x-ray examinations. I have no doubt but such permanent records would lessen the number of suits for disability.

In my many years of experience on the Medico-legal Committee of Illinois State Medical Society I found we had little trouble with our patients. Our principal trouble was with unscrupulous attorneys, and I anticipate such is the case with industrial suits. I personally believe our worst is not to come but we are on the dawning of a new era. I note with great pleasure that many disreputable attorneys are being disbarred for dishonorable conduct, and we have reason to hope that the legal profession will soon be raised to a much higher plane. But we must remember such disreputable attorneys can make little progress without the assistance of our profession as expert witnesses, so let us have a care with our criticism lest it react on our ancient and honorable profession. We still have a few ambulance chasers.

Dr. George M. Landau, Chicago: I also had the pleasure of reading Dr. Dick's paper and I can only add to what Dr. Cantrell has said, my commendation for that paper. It is quite complete and precludes any discussion.

Dr. Dick has explained in detail the situation confronting the Radiologist in Industrial Hygiene.

In 1929 long before the era of silicosis, one of our railroads had the misfortune of hiring an individual who on his first day of duty claimed he was knocked down by a locomotive sustaining an injury to his shoulder. Roentgen examination revealed a well advanced sarcoma. At trial the jury awarded the claimant a large verdict, holding that the supposed injury sustained was the cause of this disease. Thereupon the Company had installed in their employment office a complete x-ray unit and rayed all employees and those seeking employment as follows: Chest, spine and pelvis. It has stood them in good stead then as well as now, for I have learned not so long ago that to date at least no claims have been made against them on the basis of silicosis and claims on injuries have been reduced where the injury sustained has been made a claim for aggravating pre-existing bone pathology or changes such as arthritis, scoliosis etc.

I find among our Industrialists a prevailing fear that the Roentgen examination of their employees' chest will lead the employee to assume that they, the Company, are suspicious of an existing disease, and that their employees will of their own volition seek medical advice elsewhere which may form the basis of a suit on actual, imaginary or trumped up pathology. We are all aware of the unscrupulous lawyers and the tender hearted juries awarding in such cases fabulous awards. I believe the time has come however when the fear and the possibilities of suit will have to be overcome on the part of the employer if as Dr. Dick explains insurance companies will not underwrite them where the hazard is great unless they can be assured that by physical and Roentgen examination those having or those suspicious of having any pulmonary disease have been eliminated.

In the State of Illinois today there are pending suits which if rendered in favor of the claimants will bankrupt several insurance companies. It matters not judging from a few of the verdicts rendered whether the disease be tuberculosis or bronchial asthma, if it be termed silicosis the jury renders a verdict in favor of the employee despite the sworn testimony of known reputable clinicians or radiologists.

Without question the radiologist's rôle in determining the question of the presence or absence of silicosis or the allied dust diseases is the paramount one.

Dr. Philip H. Kreuscher, Chicago: I am very happy to come before you this afternoon since I have watched the development of your section in the Illinois State Medical Society for a considerable time. I realize more than ever before that there is no section which deserves larger quarters with better ventilation than this one. There is increasing interest in traumatic surgery, and when I say traumatic surgery, I must include radiology since these two are so closely related that they cannot be separated. You have had before you today problems which should have been heard by a very much larger audience.

In the industrial world the subject of silicosis, which you have just been discussing, has taken a very prominent place. In Illinois this condition up to the present time has not been compensable, but I believe that the time has come when we as physicians should have a very much better understanding of this particular subject. I doubt whether there is one doctor in a hundred who could by physical examination or even by x-ray

examination at the time when the patient is actually suffering make a diagnosis of silicosis. Because of this lack of understanding on the part of the physicians and surgeons many decisions are handed down in the courts which may not be entirely in line with the opinion of those who have given this subject extensive study. It is my understanding that one insurance company in this state has suits in connection with silicosis amounting to almost a half million dollars. One informant has told me that there are pending in the United States suits aggregating two million dollars on the subject of silicosis alone.

Discussions such as these and the ultimate publication of these papers and discussions and the dissemination of this knowledge to the doctors throughout the state is the one thing which will make meetings of this kind worth while. I hope that you will continue the study of this and other conditions in your Section on Radiology. I think you are doing a great work and wish you every deserved success.

Dr. C. O. Sappington, Chicago: Dr. Dick has given you a very excellent paper on an important subject, which will be of increasing importance in the near future.

I want to comment very briefly on this subject from the point of view of the specialist in industrial medicine and occupational diseases and try to "reach hands across the sea," so to speak, between those of us in that field and those of you who are in radiology.

It has been my unusually good fortune in the past twelve years to have viewed more than 50,000 chest plates and films with competent radiologists, from Boston to San Francisco, in a sincere attempt to discriminate between non-industrial disease and industrial disease.

Within the past few years, since we have had this so-called silicosis racket, I have seen a considerable number of films of the chest of man of more than forty years of age who were subjected to dust exposure, and I have had the opportunity to compare those with the chest films of men also over forty years of ago who had had no similar exposure. The conclusion that has been reached out of that experience is this: Where the dusts were not appreciably siliceous in content and not productive of silicosis, it was impossible to distinguish between the increase in the markings in those two types of x-ray films, e.g, those who had a mixed type of dust exposure and did not have silicosis, and those who had no dust exposure whatever.

That brings me up to an important point and the information that insurance companies are requiring, and that is an estimate of the severity of dust exposure in the working environment. I had the privilege of giving a paper on this subject yesterday in the combined meeting which some of you attended. Briefly, this estimate should consist of a physical survey of plant conditions, with an occupation analysis of men involved, so you know what you are doing on that end of it.

This should be coupled with physical and chemical determinations with reference to the concentration of the dust, the particle size distribution, percentage of quartz contained in the dust, and also the exposure of the employees in terms of years.

When you relate all these data and, as I said yesterday, correlate them with the clinical information and, above all, with the radiological findings which are very important, then you have a basis for the estimation of the hazard, which the insurance companies are going to find extremely valuable in adequate underwriting. Previously there has been no intelligent underwriting of occupational disease risks for the simple reason that they have done it by mere inspection. You and I can go out and tell whether a guard covers a wheel or not, and so can an insurance inspector. We cannot go into a plant and look at the air and say whether there is any lead or chromium vapor in it, or how much, nor can we say by looking at a cloud of dust whether it is dangerous or not. Consequently, these procedures are very important. I make a plea, therefore, that you associate these findings with your radiological data.

I wish I could share the view of Dr. Cantrell concerning the future of these court cases. I am naturally optimistic, but I think I have had enough experience in court cases to believe that the system is wrong. As long as you have jury trials, gentlemen, you are going to have these difficulties because you cannot teach a jury. Even though you could get enough people who knew something about occupational disease scientifically (there being good reasons why you cannot) you would have great difficulty in convincing the jury that a man did not have an occupational disease, no matter what your array of defense might be.

I am very much interested in the statement made by our President regarding the total numbers of alleged silicosis claims now pending. I made an estimate of the claims over the entire country about a year ago. It was about $35,000,000 at that time, from the best I could find out about it. Today it is over $100,000,000, showing that there has been approximately 200 per cent increase in one year. We must get together. That is exactly why I am making this talk to you. I will heartily cooperate in every way that I can in my line of work, with any radiologist who wants to associate with me to see if we cannot share our information. Of course, this applies to clinicians as well.

THE TREATMENT OF RHEUMATIC HEART DISEASE

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Our ideas about rheumatic fever have undergone radical changes during the present century. The same is true of heart disease. In circulatory failure we no longer focus our entire attention upon the heart. We now consider the condition of the arteries, veins, capillaries and tissue chemistry. One condition may require

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tonic or supportive treatment and another the reduction of vascular spasm or relaxing treatment; still another the deprivation or addition of certain chemicals such as N_a, C_a, protein; these being met as the situation demands. In rheumatic fever, long ago we stopped focusing our entire attention upon the rheumatic side of the disease and considered the heart involvement that went with it. Today there is still another stage of advancement in the knowledge of rheumatic fever and so in addition to these two phases we now consider the damage done to the general vascular or blood vessel system. When looking at the capillaries in the nail bed of the spindle shaped finger of infectious (Rheumatoid) arthritis, it is seen that they have undergone considerable damage for they are markedly reduced in number and are very much reduced in caliber. The atrophy of the muscles in rheumatic extremities is probably not all due to disuse, and may be in a large measure due to blood vessel damage by the disease. In fact many leading physicians go so far as to say that rheumatic fever is a disease of the circulatory system. Of course the heart is a part of the circulatory system.

Rheumatic fever, in some way, is associated with infection, possibly a virus and most certainly with the streptococcus; although this is not universally accepted. It is well known that infections which we assume to be due to the streptococcus often precede the onset of rheumatic fever. The outstanding examples of this are tonsillitis and scarlet fever. In addition, nasopharyngitis, sinusitis, mastoiditis, infected ethmoid cells, teeth and gums are probably the most commonly associated factors held responsible for the activation of rheumatic fever. The severity of this pre-infection fails to determine whether or not the patient will develop rheumatic fever for very often mild upper respiratory infections are completely forgotten by such patients. Instances of these pre-infections occurring over and over again, sometimes preceding by as long as three or four weeks, compels the feeling that if they were properly treated rheumatic fever would be effectively prevented. Keeping in mind this possible relationship will at least facilitate early recognition and thereby minimize the consequences.

That rheumatic fever is a systemic infection is a rather widespread notion. There is also the possibility that the heart and blood vessel system becomes hypersensitive to the toxic products of these pre-infections. In either circumstance there is a real advantage to be gained by diluting the toxins with copious liquid administration during the course of the infection. A whole evening could be spent discussing means of increasing the patient's resistance; I will emphasize rest, vitamins, sunshine, and glandular therapy.

The recognition of rheumatic fever is often very difficult. Young individuals may have little or no rheumatism, but they do have early signs of heart involvement. Adults have more pronounced joint involvement, but often this tends to be of short duration. The early recognition of rheumatic fever is our second most potent factor in its treatment. This is most difficult in cases of mild degree and insidious onset or both. It is manifested clinically very often by fever of undetermined origin, abdominal pain, frequent epistaxis, precordial pain, pleurisy, general stiffness, joint pains, muscle pains, "growing" (sic) pains, chorea, subcutaneous nodules, various types of erythemas, leucocytosis, persistent vomiting, sweating, tachycardia, easy fatigue, undernourishment, loss of appetite, pallor; and especially any group of these symptoms associated with the physical or laboratory findings of endocarditis, pericarditis, or myocarditis is strong presumptive evidence of rheumatic fever. There is one point worthy of emphasis with regard to the physical signs of mitral stenosis. Every once in a while the condition is found by having the patient exercise a little and sit down leaning forward or lie down on his left side. In this manner the presystolic murmur is frequently heard over the cardiac apex or in the third interspace just left of the sternum while it is not heard upon ordinary examination.

Absence of fever and leucocytosis are often misleading because of the nature of the disease. Many weeks may pass without elevation of either temperature or white count, but the rheumatic fever may be active in spite of this. Several laboratory measures are of service in detecting this activity. Those of most importance are the sedimentation rate of the red blood cells and the electrocardiogram. The sedimentation rate may be done in any size graduated centrifuge tube with a small amount of citrate or oxalate just

so that the conditions are always similar for different patients. Any rate faster than 75% in 1 hour assumes the presence of infection, when other common causes are eliminated. This test is rather generally used and is considered rather accurate, but not 100% accurate. The electrocardiogram when studied serially may give information regarding the presence and course of the infection in the heart. Rather frequently in rheumatic fever the conduction of the nervous impulse, which you saw in the movie, is delayed in its passage from the auricles to the ventricles. In the electrocardiogram this is demonstrated by an increased P P interval. Sometimes the S T intervals are elevated or depressed as they are seen in coronary disease. With recovery these may return to normal or at least prolonged P R interval becomes stationary. Other changes are observed but none are so important as these. Of the clinical signs mentioned, probably the most valuable are increased pulse rate and changes in other heart findings from day to day.

In the more severe cases which diagnose themselves there is of course leucocytosis, fever, tachycardia, increased cardiac dulness, and even engorged liver and edema.

These signs and symptoms are usually present during the active stage of the disease, and it is especially important to differentiate the active from the inactive stage. It is during the active stage that we can do the most for these people, because every unnecessary bit of work the heart does in this stage retards healing that much longer. Consequently, during the active stage, the patient is automatically limited to a minimum of activity according to the severity of the disease. With marked symptoms bed rest should be absolute 100% of the time. As the degree of severity is less the patient is permitted a proportionate amount of exertion. After all signs of activity of the disease have subsided, the patient resumes his physical exertion according to the functional capacity of his heart.

Treatment during the active stage is a tedious affair for the patient. The more sick he is the better the cooperation. It is easier to control all phases of the treatment of rheumatic heart disease in an institution, but with intelligent parents or with an intelligent adult patient, treatment can be carried out satisfactorily in the home with the least expense. Absolute bed rest is indicated as long as there is fever and an increased pulse rate. Large quantities of fluids and large quantities of salicylates are next in order. The salicylates should be used in quantities just short of causing symptoms even up to 150 grains a day. These and other details of treatment such as wrapping sore joints in blankets and heat applications require no discussion.

When the symptoms are of a very low grade it is rather difficult to keep the patient on restricted activity. Most of them, however, will limit themselves to activity that will not cause fatigue, dyspnea, or palpitation when they are aware of the fact that they have heart trouble. It doesn't matter about those that knowingly refuse to take the proper care of themselves.

The average course of a first attack is from 4 to 8 weeks. After this is over and all tests show that activity has ceased, the suspicious sources of infection are removed, e. g., tonsillectomy is done within a month or two after subsidence of the infection. Sometimes the rheumatic fever persists and becomes established and follows a chronic course. In such cases the preinfection very often has also become chronic and remains as a feeder to prevent recovery. Under these circumstances we are in somewhat of a dilemma. I would drain a tonsillar abscess but I would not advise removal of the tonsils unless the rheumatic fever was of a very low grade. Similarly I would have a sinus irrigated through the natural opening, but I wouldn't advocate an open operation. If after three months or so and the rheumatic fever is of a sufficiently low grade and shows no signs of letting up, I would then gradually remove the various foci of infection. This cannot be done too cautiously nor too deliberately as it is dangerous business and serious consequences can ensue. Fortunately most of these persistent cases are of rather low grade and can be handled in this manner. Where the rheumatic fever is of a high grade and even if it persists for months or years it might prove fatal to remove foci of infection and it is better to wait.

After all foci of infection are removed if the rheumatic fever persists it is time to use vaccines and bouillon filtrates either stock or autogenous. Non-specific protein therapy may also be tried. Whatever is done of this nature is still in a transitional stage. Every one who handles many of these cases finally limits himself to a few procedures. A certain percentage of cases receive splendid results, but care must be taken to prop-

erly evaluate our treatment. A first attack of rheumatic fever will almost always be cured within 6-8 weeks no matter what is used. A second attack likewise. But thereafter the attacks will hang on longer and longer and the previously successful treatment will then prove to be of no avail.

When all others fail, a good method of treatment for active rheumatic fever is by intracutaneous injections of autogenous bouillon filtrate,[1] It is never used in the presence of infectious foci and then only if established as a chronic case. When the foci of infection are removed, secure cultures and usually one or all three of the following organisms will be recovered: 1. Streptococcus hemolyticus, 2. Streptococcus viridens, and 3. Staphylococcus hemolyticus. These are grown on a dextrose brain broth for 10 to 14 days and are reinoculated several times. This broth is filtered through a Berkefeld filter and the patient tested by a skin test to see if he is sensitive to that particular bacterial toxin. Uninoculated broth is used as a control. If the patient is sensitive I then give him a course of from 8 to 10 intracutaneous injections of this filtrate with the dosage starting at 1/10 or 1/20 cc. and increasing up to 3/10 or 1 cc. The injections are given at 5-7 day intervals and the larger doses are divided and injected into 3 sites. No injections are ever made into the same site the second time.

The manner by which this method works, is, either by desensitization to the products of the growth of these organisms or by stimulating the reticulo-endothelial system to increased activity of its defensive mechanism.

In most instances where the activity of the rheumatic fever has not been stopped, the failure is due to persistent focal infection. That which is eliminated with the greatest difficulty is recurrent upper respiratory infection, especially naso-pharyngitis. It is possible that a new mode of attacking this problem may raise the percentage of cures. The naso-pharyngitis is being treated[2] by nasal instillations of the bouillon filtrate and the frequent cold cases are given injections[3] of pooled vaccines and filtrates from current seasonal colds and protective measure.

Stock vaccines or filtrates are not used except to fill in while waiting for the preparation of autogenous sera.

The final step in treatment of these active cases, who cannot be cured by these methods, is to advise a warm, dry climate such as is found in New Mexico and Arizona. It is known that in some of the tropical countries rheumatic fever does not exist. Such a place is in Puerto Rico and I believe another is in Argentina. Unfortunately the condition recurs when the patient returns to our north temperate zone climate and especially does it return if some focus of infection remains.

Then finally comes the problem of advising patients, whose rheumatic fever has become inactive, how to live. They most certainly should know that each succeeding attack becomes progressively worse so that they will take the proper precautions to avoid them. Such precautions are the avoidance of fatigue, chilling, direct exposure to other people with colds, and all forms of infection. Then the important though simple job of estimating the functional capacity of their hearts is the last step. Simple tests are devised for this purpose. I use 20 hops on each foot and normally the pulse rate rises to around 100 and returns to the original rate in one minute. If the pulse rate increases to 140 or so and stays there several minutes, I know that the patients' ability to perform work is markedly limited and he is placed in Class II B. If there is a less marked response, say to 120 for 1 or 2 minutes he is placed in Class II A with slightly limited activity. If the exercise tolerance test is normal, he is placed on unlimited activities, Class I. There are other more exact exercise tolerance tests, e. g., 2 steps each one foot high so that the patient lifts his body weight a known height and exerts a certain number of foot pounds. A very important test to remember is the patient's response to the activities to which he or she is accustomed. If the patient follows the rule to do nothing that causes undue fatigue, dyspnea, palpitation, or edema he will be living within his physical means.

I would like to emphasize the tremendous benefit secured by patients with either active or inactive rheumatic fever who are obese or are anemic if you correct only these conditions. Immedi-

1. Local Immunization. 1927. A. Besredka. Immunity in Infectious Diseases. 1930. A. Besredka. Both published by Williams and Wilkins.

2. Method of treatment devised and developed by Drs. W. L. Post and W. L. Wood.

3. Method of treatment devised and developed by Drs. W. G. Hibbs and W. A. Thomas.

ately their cardiac reserve is increased a great deal merely by eliminating this excess heart strain.

Conclusions: The treatment of rheumatic fever includes:

1. Prevention by the proper care of and elimination of the pre-infections.
2. Early recognition, by knowledge of clinical signs and symptoms.
3. Differentiation between active and inactive stage.
4. Adequate treatment until inactive and restriction of physical activity within the patients' limits according to the functional capacity of his heart.
5. Susceptible patients avoid predisposing causes such as fatigue, chilling, and exposure.

PLACING THE RESPONSIBILITY FOR INCREASING CANCER MORTALITY

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Among the captains of the men of death cancer holds second place, ranked only by diseases of the heart. It has risen from comparative obscurity in fifth place to its present commanding position during the past four years. If we consider this fact alone and without an analysis of the causes for this increase, the situation is gloomy indeed and our work for the control of cancer appears fatuous and without foundation. But we must consider the fact that the age distribution of our population has been shifting toward a preponderance of older people and that this shift is bound to continue for years to come. We can see that with the eradication of typhoid, malaria, smallpox, diphtheria and other diseases that formerly decimated the ranks of the younger population many more people are living long enough to reach the age when cancer expectancy is naturally increased. Since every one must die sometime it is obvious that if the death rate of one disease decreases there must be a relative increase from other causes and the next in rank will be advanced. Fundamentally much of the increase in cancer mortality is due to the accomplishment of preventive medicine, a back handed compliment to a great work.

In addition to this relative death rate we find an increase in the specific death rate per 100,000 of any particular age group. This is partially due to better diagnosis and reporting of cancer deaths that were formerly attributed to other causes. But after we have considered these unavoidable causes the fact stands that the cancer death rate is entirely out of proportion to cancer incidence and the thing of immediate interest is the relation of the medical profession to this ratio and what we may be doing toward correcting the situation.

We are teaching that cancer can be cured if treated properly and without delay. To this we must add that to a great extent cancer may be prevented and bend our efforts toward closer examination of all of our patients, recognition and correction of precancerous or border line conditions and instruction of the families that look to us for physical advice and care.

In the treatment of cancer we are ready to agree among ourselves that there are two acceptable methods—surgery and radiation. Under the heading of surgery we include operative, electrosurgery and any possible mechanical method of destroying or removing the new growth. Under the heading of radiation we include the various forms of x-radiation and radium. In making this plot of methods I do not infer that these are or should be the representatives of different schools of thought in cancer therapy, but that if the cancer patient is to receive the greatest benefit from treatment, the individual case and patient must be analyzed and the method or methods used that are indicated for the case in question. Where cancer therapy is practiced from a strictly surgical viewpoint, many cases will receive surgical treatment where it is contraindicated and patients may be pronounced incurable when they are only inoperable because the surgeon is not aware of the possibilities of other methods of treatment or is even disdainful of nonsurgical methods.

The man who practices Roentgenology as a specialty may develop a warped viewpoint and attempt x-ray treatment in cases that are primarily surgical, or which should have radium treatment. He may become so blinded by his own glowing tubes that he automatically criticizes any suggestions of surgical treatment.

The radium therapist who takes cancer cases as they come and tries to treat all of them by

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this one method is poorly equipped mentally and physically, so much so that the possessor of a small quantity of radium may become an absolute menace to the welfare of his community. The practice of cancer therapy by mail and the indiscriminate rental of radium have become such vicious practices that they are at last reaching the attention of our societies.

This slightly acrimonious criticism is made to direct your attention to the fact that there is no single method of cancer treatment that is self-sufficient and that any man or group of men that is treating cancer without a coordination of all of these methods is failing in the fundamental duty of physician to patient. A background of an alert conscience and a dominant sensibility to the rights of the patient is needed in this work. This background is ascendent when the radiologist turns a carcinoma of the fundus over to the surgeon and the surgeon turns a carcinoma of the cervix over to the radiologist, and when radiologist, surgeon, internist and pathologist meet to discuss the proper treatment for any individual case of cancer the heavens almost glow with preparation for the dawn of a millenium.

I appreciate that I am addressing a group of individuals with extensive and specialized training in general and chapter surgery and that the idea of group practice in the treatment of cancer is out of consideration with the most of you. Your viewpoint as individuals is the same as mine, as I am not associated with any fixed group and still try to assert a certain amount of rugged individualism. But with my viewpoint as an individual worker, I have found that a wide cooperation with other branches of medicine is possible and profitable to all concerned. I find no hesitation in referring any patient to a general surgeon, a gynecologist or internist for an opinion. A trade off of help has become possible and somehow the financial side seems to balance as the years pass without fixed fees on individual cases.

There are some elements in fixing the responsibility for cancer mortality that must be considered separately.

The element of conscience and personal honesty I cannot solve and am not in position to discuss. To me the willful trafficking in people's health and life by use of medical or surgical treatment known to be wrong or contraindicated is the filthiest form of racketeering in existence. I believe that is enough to say on that topic.

Most cancers are curable if treated properly and without delay. In this statement we cover the two vital points in cancer control and assert the possibility of fixing the mortality responsibility and lowering the death rate. To fix this responsibility we may follow the course of action of an average cancer patient.

A man who develops a suspicious lesion of the lip will follow one of two courses. He will listen to the advice of a lay friend or of his family physician. If he listens to the lay advice it may be good or bad and I am happy to say that this advice is becoming better year after year, thanks to the constant educational work of the American Society for the Control of Cancer and the various medical societies. Very frequently, however, the lay friends have their entire outlook founded upon one or two unfortunate cases and will advise against any regular medical attention and will persuade the patient to let it alone and let nature rule or will provide him with the literature of some nostrum factory or induce him to go to some one who has a miraculous "Cancer Cure" that he got from an Indian medicine man.

It is very gratifying to find that the work of cancer education is bearing fruit and that in communities where talks on cancer have been made to school assemblies, women's clubs and service clubs there is a decrease in time and difficulty in instituting proper treatment.

If the man with the suspicious lip lesion goes to his family physician his course may progress through the immediate institution of proper treatment and ultimate cure or it may be dangerously delayed by an uncertain attitude of the physician who through desire to spare the feelings of his patient or through mental indolence advises him to wait until it causes him some trouble. This attitude is comparable to advising a man in a hole with a rattlesnake to pay no attention to the snake until it bites him. The time to crush the snake is now.

May I quote from Drs. Leuceutia and Weller in the report of the Michigan cancer survey:

"The fate of the cancer patient rests very largely with the first medical adviser whom he consults. It is unfortunately true that the greatest single cause of delay between the first consultation with a physician and the institution of treatment is poor advice on the part of

the attending physician. A patient with carcinoma of the stomach can pass undiagnosed through the hands of ten physicians before a diagnostic x-ray examination is suggested (an actual case). The local physician is the very foundation of an organization for the prevention and treatment of cancer. By periodic physical examinations which are worth while and not perfunctory, by recognition and elimination of so-called precancerous conditions, by warning against occupational hazards known to be cancerogenic, by serious consideration of all suspicious signs and symptoms, and particularly by referring the patient to diagnostic clinics for those special regional examinations which may be indicated, the physician in first contact with the patient becomes the "key-man" in the organization. It is recommended that through more extensive instruction along these lines in medical schools, and by postgraduate clinics, conferences, and lectures, the profession be kept fully informed of advances in the fields of endeavor suggested, and made more keenly conscious of individual responsibility toward the potential cancer patient. Similar instruction is appropriate for the dental profession."

If we really intend to try to lower cancer mortality by producing a sense of responsibility and by securing early institution of proper treatment we will have to do more than criticize existing conditions; we must offer a definite program of education and assistance. This program must be directed toward making the lay public conscious of the fact that "most cancers are curable if treated properly and promptly." They must be so acquainted with the danger signals of cancer that they can recognize them and go immediately to consult a physician. This lay program can be carried out by talks to men's and women's clubs, to high school assemblies and in the churches. Books, literature, posters and speakers for this work will be furnished by the American Society for Control of Cancer and the Educational Committee of the State Medical Society without direct expense to the local societies.

With the advance of cancer mortality from fifth to second in rank during the past four years, it is imperative that different phases of cancer control should have an important place in the program of the county medical societies. If the society meets ten times during the year, at least three programs should deal with different phases of the subject. These programs should be presented by men who can give definite help and should be of consultation value to every member of the society, the general practitioner and all representatives of the chapter specialties. Within the past year in a county society meeting I sat through an hour and a half talk on the detailed technique of the surgical treatment of cancer of the sigmoid and rectum. It was a fine demonstration of what the speaker had done in this infrequent and complicated procedure but was generally worthless and tiresome to the society as a whole. The reaction was not good and the result will be a small crowd when the next cancer program is announced. The discussion of cancer of the colon and rectum could be made interesting by presenting the symptoms that usually lead a patient with the disease to consult his physician and how the physician might carry on the examinations necessary to establish a diagnosis. This phase of the subject will appeal to every clinician while the technique of surgical removal of the sigmoid will appeal to very few in the average county society.

There is a definite need for emphasis of the recognition of precancerous conditions and repetition of the danger signals. A symposium on danger signals with five to ten minute talks by men representing the special practices will bring out a wealth of good material and command the interest of a large group.

"The Prevention, Diagnosis and Treatment of Cancer of the Lip" is a subject that always bring out a free discussion.

"Cancer resulting from neglected cervical laceration" draws the interest of another group and emphasizes the need of postnatal examination and care.

The Canti film program with pathology exhibits and demonstrations can be repeated every two or three years and always draws an interested audience. When this film is shown to lay audiences with a nontechnical explanation and description it produces an appreciation of the extent of cancer research and furnishes a topic for conversation at many bridge tables.

The greatest possibility for lay education lies in the daily contacts of physician and patient. Lectures, displays and demonstrations are valuable but the direct contacts and careful answering of questions bring confidence and give people the opportunity to quote "My Doctor."

There are eight basic questions in cancer control. Part or all of these will surely be asked in any conference between physician and laymen. And almost any general question on the subject can be paralleled with one of the eight. They are:

1. What is cancer?
2. What causes cancer?
3. Is cancer contagious?
4. Is cancer an inherited disease?
5. Is there any shame or disgrace about cancer?
6. Why is cancer increasing?
7. Can cancer be prevented?
8. Can cancer be cured?

The answers to these questions should be as familiar to physicians as their prescription symbols. A man who can answer these without hesitation or evasion is indeed well informed in the principles of cancer control. In talking with laymen use the word cancer rather than malignancy, malignant growth, neoplasm, carcinoma or other terms which may confuse the patient and lead to false impressions. Cancer is an ugly word but we deal with an ugly and vicious condition. Frankness will bring results.

Through years of cooperation and work the medical profession has put screens on our doors and windows, sanitary plumbing in our bath rooms, sewage disposal in our cities. It has almost eliminated epidemics of contagious diseases. It has produced numberless amenities of living. It has dug the Panama Canal. By cooperation and personal effort it can reduce cancer mortality. Cancer can and must be controlled.

DISCUSSION

Dr. Henry W. Grote, Bloomington: Dr. Williams has covered the subject of the general psychology of the cancer patient very carefully and thoroughly. I would like to emphasize one statement he but referred to, that is, the family physician should enter into the problem more than he does. He is the medical foundation or the corner stone of the family. Unfortunately some workers in x-ray and radium had, for several years in the past, published case reports in lay journals, of cases cured by x-ray and radium. This put into the minds of the laity the idea that surgical operations were not necessary, but that they could go to a laboratory, lie on a table, be perfectly comfortable and be cured. This idea is still in the minds of the common people to a large degree. The judgment of these people is evil and their wisdom is zero.

The better sort of the common people have a peculiar and complaisant judgment, and run about consulting the user of a method upon which they place their own evaluation. They take advantage of any seeming difference of opinion existing between reasonable and honest members of the profession. It will probably be many years before this sort of misinformation is eradicated.

In my experience I have had lots of people come in who had been operated on and had a recurrence, and they would not go back to the family physician or the surgeon. Some roentgenologist appealed to them and if I happened to be the one, they would tell me they expected to be cured. In the treatment of some of them we occasionally achieved remarkable results. Most of them, however, died of carcinomatosis. Some of us being enthusiastic are carried away with the idea that we can cure these patients. Recently I have refused to have anything to do with a case of suspected cancer unless I could have a consultation with the family physician and the surgeon, so that the patient will understand that possibly they will have to be operated on, and probably will. The family physician is the one who is going to see them at the wind-up. We all thoroughly understand each other. In the last seven or eight years the efforts in my particular office have been rather gratifying. The results have been better, and the relationship between patient and surgeon is very much better. Why not give up having any argument with the surgeon? I have many patients thank me for doing all I could. The cooperation of all concerned is the real crux of the whole matter.

Dr. Frank L. Rector, Evanston: In my work as field representative for the American Society for the Control of Cancer I am constantly running up against the problems that Dr. Williams has so ably discussed, particularly the relation of the physician to this question. Our Society feels that the control of cancer rests on the educational interest to be developed by the physician and the laity.

As we study the cancer problem we find that there are about three living cases for each death at any given time. In Illinois there were 9,200 deaths from cancer in 1933, so there are in the neighborhood of 27,000 to 30,000 cancer patients in the state at this time. It is up to the physician to become proficient in the management of these cases.

The development of tumor services in certain hospitals is a step forward in this control program. We all agree that cancer is not a one man disease. No one physician should assume the entire responsibility for diagnosis and treatment of a given case. As the previous discussor said, it is a cooperative problem between the family physician, surgeon, pathologist, and radiologist. The first physician seeing a cancer patient determines the outcome of that case. Some physicians have the indefensible habit of waiting to see what will happen in the next few weeks or months. We all know that cancer is an emergency condition, not for treatment, but for diagnosis. When the diagnosis has been established the indicated treatment can be carried out. We have to overcome the waiting on the part of the patient. The average woman with a lump in her breast waits six months before going to her physician. If she has vaginal bleeding she will wait eight months. The physician is not responsible, except in a remote sense, for this waiting period on the part of the layman, but for the waiting that ensues after the patient gets into his hands he is responsible. The more the physician contacts his patient with educational suggestions the shorter this waiting period will become.

Studies made at five-year intervals at the University Hospital, Iowa City, Iowa, have shown a marked decrease in the waiting period indulged in by the physician after the patient gets into his hands, so that is a hopeful sign.

I feel, and I am sure that the officials of the American Society for the Control of Cancer feel, that the control of this problem lies fundamentally in the hands of the medical profession. No other group has such close contact with the cancer individual, and the profession must further stimulate its members to an appreciation of what the cancer problem really is and the control measures to be employed. The American Society for the Control of Cancer stands ready to assist in this work to the extent of its resources.

DOCTOR GEORGE FRANCIS SUKER
1869-1933

BEULAH CUSHMAN, B. S., M. D.
CHICAGO

George Francis Suker was born in Detroit, Michigan, October 12, 1869, son of Herman Suker, the proprietor of a large book store on Gratiot Avenue.

His father was a Prussian, who with his wife came to this country in 1862, during the great exodus from Germany of young men to avoid the compulsory military service.

His mother, Emelia Toelle-Suker was an accomplished composer and organist.

As a lad Doctor Suker finished the Detroit Public High School, and entered the Academy, where he was tutored in Greek, Latin and German. He studied medicine at the University of Michigan in Ann Arbor, graduating in 1892.

He served as interne at the University Hospital in Ann Arbor from 1892-1893, and following this service became resident interne in the eye, ear, nose and throat service under Professor Carrow, where he remained until 1895.

It was at this time that his interest became centered on the occular brain centers, and interesting work in the early years of bacteriology was carried on under Doctors Vaughn and Novy of Ann Arbor.

During these years at the hospital he conducted some of the undergraduate classes and clinics, and was a most enthusiastic teacher, and this he continued to be the remainder of his life.

Doctor Suker's father was prejudiced against sending his son to Europe for post graduate study, as he had taken refuge in this country, and he encouraged the prolonged clinical study at the University and other clinics here.

In 1895 Doctor Suker went to Toledo, and began the practice of medicine, specializing in eye, ear, nose and throat, and remained until 1901.

In 1901 he came to Chicago, and limited his work to ophthalmology.

Doctor Suker became a member of the ophthalmological staff at the Post Graduate Hospital in 1901, and was the active head in ophthalmology for the last twenty years of his life. It was in this institution where he met and taught many ophthalmologists from all parts of the country. In the experimental laboratory he was able to carry on his studies of the optic pathways and many other interesting clinical problems,

From 1901 to 1906 he was also instructor in ophthalmology at the College of Medicine, University of Illinois, when Doctor Casey Wood was professor.

Later he spent some time at Rush Medical College under Doctor Hotz.

During the winter of 1909-1910 he became secretary of the Chicago Medical Society, and their programs that year were as outstanding as in 1928 when he was president of the Chicago Opthalmological Society. He showed his great organization ability, as he did in the great war later. Among others, in those early days, he invited Doctor Spiller of Philadelphia and Harvey Cushing of Boston to discuss brain tumors.

Doctor Suker also planned a group of public meetings at the public library, in which medical problems were taken up and discussed by authorities for the education of the lay audience. The hall was always packed to the doors. These subjects included: The Boy Criminal and Juvenile Court, by Judge Lindsay and Mrs. Ella Flagg Young; Certified Milk in Chicago, by C. S. Bacon; Tuberculosis in the Home by Frederick Tice, and Surgery from the Layman's Standpoint, by C. S. Barrett.

As secretary of the American Academy of Ophthalmology and Otolaryngology from 1905 to 1911, its president in 1912, and Councilor afterwards, Doctor Suker helped to plan and

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Presented at Annual Dinner of Section on Eye, Ear, Nose & Throat, May 15, 1934, at Springfield.

was able to put into action the Section on Instruction, which has meant so much to the development of the Academy. During this time also the agitation for a standardized training in ophthalmology and otolaryngology was found necessary and the committees were appointed to consider such plans. After a great deal of preliminary work, and with committees from the other National societies the American Board of Ophthalmic Examinations was organized in 1916.

It was in 1912, 22 years ago, that Doctor Suker as Secretary, and Doctor W. O. Nance, as Chairman, opened the first meeting of this section in the sun parlor of the Hotel Leland, Springfield, Ill. This was two years after the suggestion had been made and several committee meetings were held to make special sections possible. The same year the Public Health men organized their section. As far as I can find, the Illinois Medical Society was the first state society to have special sections.

An outstanding service was given to Cook County Hospital as ophthalmologist from 1913 to 1931, and the large clinics which he organized at least once a year, through the years, for the ophthalmologists, will long be remembered. At these clinics Doctor Suker and the internes spent many hours examining all the patients in the different medical and neurological wards for interesting ophthalmological findings, as well as the patients who presented themselves to the eye department. These patients, from 75 to 100, would be seated in the big hall on the second floor, back to back, and a note was pinned on the coat with the diagnosis and the most interesting points noted. A string of electric lights was hung before the universal use of the electric ophthalmoscope.

After two hours or so in which the cases were examined by the visiting doctors, the cases would be taken up for general discussion. The internes and other attending men would present some of the more unusual and rare cases. But always Doctor Suker was the instigator and prompter to present this wealth of material at County as "The Teacher" to the many interested practitioners, many of them who had been students of his at some time.

Two notable cases, that of "Peter", whose vitreous was tapped and replaced by normal salt solution eight or ten times following an iridocyclitis and cataract extraction, probably sympathetic in origin, and still retains 0.8 vision, and "Celia" after bilateral cataract extraction and many intraorbital injections, with retinitis pigmentosa, and who also retains central vision of 0.6 and 0.8 respectively, are a great challenge to us not to give up.

In September, 1917, Doctor Suker volunteered and left his busy practice and hospital connections, and went to Camp Custer as a Major, in the Great War, and became chief of the head surgery section. Doctor N. N. Wood, his commanding officer, wrote "that the avidity with which Doctor Suker applied himself to anything which he or his associates saw that should be done was very inspiring and contributed very greatly to the success of whatever part of the hospital was the scene of his activities. He took a serious interest in the Y. M. C. A. in the camp at large at Camp Custer, and on one or more occasions I recall his having given Sunday night addresses, which we spoke of among ourselves as "sermons." He always gave me the impression of being thoughtful and serious-minded in a religious way, but he never intruded his views upon others and even though I was aware of his giving these talks and have known him intimately since the war, I do not know if he was a member of any church."

The treatment of optic atrophy which he carried on for many years by the use of bichloride of mercury injections into the ventricles and later into the cisterna magna was summarized and presented before this society in 1932.

His medical library and the best medical equipment possible for his office, were his hobbies in medicine.

As an associate of Doctor Suker's the last eleven years of his life, I learned of the thorough student that he was, an indefatigable reader of all the ophthalmic literature, foreign and domestic, for he was an able linguist. His versatile and active mind could grasp the problems presented by the research worker immediately, and apply it to some clinical problem in his own mind. This is shown in the 77 contributions to literature, which include the reports of the use of many new drugs and instruments.

His high regard for ability was always paramount to any personal dislike.

It is most touching the high regard which his patients hold for him as a friend. There are few days go by that as the patients see his picture in the office, that tears are not silently shed.

Doctor Suker was a most considerate, honest and gentle man with his patients, yet when the occasion demanded he was most firm.

He was a true friend and his keen inquisitiveness and real scientific idealism as expressed by Doctor Wilder made up the great man that was our Doctor Suker.

25 East Washington St.

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TREATMENT OF CHRONIC TYPHOID CARRIERS

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Although typhoid fever no longer holds a leading place in general mortality statistics, the chronic carriers of typhoid bacilli remind the epidemiologist that this disease is still a potential public health hazard. The numerous attempts that have been made to cure the carrier state by chemotherapy and immunological procedures have been unsuccessful, and surgical removal of the gall bladder is generally considered the most reliable means of treatment at the present time (Browning, et al.,[1] Bigelow and Anderson[2], Seftner and Coughlin[3], Vogelsaang and Haaland[4]). The facilities required and the risks attendant upon surgery, however, are evident to those concerned with the problem, and in states and districts where no provision for surgical treatment is made, control of the carrier depends upon educational and administrative measures. Both the surgical and administrative methods have their advantages, and still, the occurrence of typhoid and paratyphoid infections traced to carriers indicates that there is a demand for the development of a treatment for these persons which can be safely applied in communities with average medical facilities.

Read at joint session of Sections at Annual Meeting of Illinois State Medical Society at Springfield, May, 1934.

For the past two years we have studied the effects of repeated x-ray exposures over the liver region in chronic fecal B. Typhosus carriers. In all, twelve individuals have been under our observation, of whom five were males and seven females, ranging in age from twenty to sixty-eight years. The period over which they have been known to be carriers varies from two to twenty-five years. In two instances there was no history of clinical typhoid fever. All were free from gall bladder or hepatic disease as determined by a searching history, but in one patient, the gall bladder had been removed five years ago on account of stones.

The following procedure was used: All carriers were under observation for periods of one week to several months during which stool specimens were examined daily. Using standard Public Health Laboratory bacteriological methods for the bacteriologic examinations the output of typhoid bacilli in proportion to B. Coli in the stool was recorded in terms of percentage based upon colony counts of the plates. Endo's media was used. The effects of chologogues, such as ox-gall in 7½ grain capsules given orally was likewise observed, and the records of these observation periods served as controls in estimating the effects produced by the x-ray exposures.

Following each x-ray treatment, the patients were asked to submit stool specimens once a day for two successive days, and at weekly intervals thereafter until the next exposure. One-

CHART 1.

EFFECT OF X-RAY ON CHRONIC TYPHOID CARRIERS

Patient	Sex	Age	Years Since Typhoid	Type of Carrier	Average Output	No. of X-ray Treatments	Average Interval	Dose of Each	Average Output at Present	Period of Examination since X-ray was Discontinued
1. R. T.	M.	20	No history of typhoid	Persistent	60%	1	.....	100 r	0	2 years
2. B. V.	M.	48	8 years	Persistent	85%	16	10 days	500 r	0	10 months
3. L. P.	F.	25	2 years	Intermittent	50%	7	2 weeks	100 r	0	11 months
4. J. K.	F.	64	6 years	Persistent	75%	6	3-3 weeks 3-2 weeks	100 r	0	12 months
*5. M. W.	F.	68	25 years	Persistent	50%	3	3 weeks	100 r	10%	12 months
6. E. H.	F.	65	3 years	Persistent	70%	3	3 weeks	100 r	20%	18 months
7. H. M.	F.	48	11 years	Persistent	50%	3	3 weeks	100 r	15%	18 months
8. C. E.	F.	40	11 years	Persistent	25%	5	3-3 weeks 2-2 weeks	100 r	20%	18 months
9. M. A.	F.	46	17 years	Intermittent	30	5	3 weeks	100 r	30%	14 months
10. G. P.	M.	38	No history of typhoid	Persistent	90	3	2 weeks	100 r	80-90%	16 months
11. J. G.	M.	50	6 years	Persistent	75	3	5 weeks	100 r	90-98%	Died Feb. 1933
12. E. T.	M.	49	16 years	Intermittent	35	4	3 weeks	100 r	35-98%	14 months

fifth skin erythema dose* of x-ray was given over the hepatic region at two to three-week intervals from purely an arbitrary standpoint. It was felt that this quantity could be used repeatedly with safety, and no variation in the dosage was made in this series except in one instance. In this case, the individual preferred to have the treatments given by his physician, who increased intensity of exposure and shortened the time interval between treatments.

Chart 1 summarized the results obtained up to the present time. The twelve carriers fall into three groups. The first is made up of four individuals who were rendered B. Typhosus free, the second of four whose total output of B. Typhosus in the stool was reduced, or made irregular, and the third of four carriers in whom x-ray has produced no apparent effects. Graph 1A, 1B and 1C present typical protocols during treatment periods of one patient from each of these three groups. Individually, the case records are as follows:

Case. 1. R. T., male, aged 20 years. No history of typhoid fever. No history referable to disease of the gall bladder. Discovered as a carrier in 1930 through routine survey of dairy students at the University of Illinois. Average daily output of typhoid bacilli in the stool 60%. He was under observation in our medical wards in the hospital for a period of two years, during which vaccination, both oral and parenteral, bacteriophage, and foreign protein therapy were without effect. After one deep x-ray exposure over the liver region the stool became negative for typhoid and repeated examination of the stools and duodenal contents have been negative for the past two years. This is the only patient in the series on whom duodenal examinations were made.

Case 2. B. V. Male, aged 48 years. Typhoid fever in 1925 after which stool specimens failed to become negative. Average daily output of B. typhosus in stool was 85%. No duodenal examinations were made. This man preferred to have x-ray treatments given by his physician, who used 500 r skin erythema doses at weekly and ten day intervals. Several severe reactions, characterized by nausea, vomiting and abdominal pain were encountered, but the patient insisted upon continuing with the treatments. Sixteen exposures were given, although the stools became negative after the tenth treatment. The patient was especially concerned about his condition, and sent specimens to a private laboratory for examination at the same time he submitted them to us. Up to the present time he has been free of B. typhosus for a period of ten months, and has had no complaints in spite of the intensive therapy.

Case 3. L. P. Female aged 25 years. Had typhoid fever in 1931. Intermittent carrier, excreting on the average about 50% typhoid bacilli in stools during positive periods. No history of gall bladder disease. She was given seven x-ray exposures at two week intervals during the winter and spring of 1933. One week after the last exposure stools became negative and have continued negative up to the present time.

Case 4. J. K. Female, aged 64 years. Typhoid in 1927. Gall bladder removed four months after convalescence for cholelithiasis, but stools continued to be persistently positive for typhoid with an average

*The exact dose was 170 P.K.V. at 25 ma. filtered through ½ mm. copper and 1 mm. aluminum at a focal distance of 50 cm. The time of exposure was two minutes.

daily output of about 75%. She was given six x-ray treatments, the first three at three week and the last three at two week intervals. Graph 1 represents record of her treatment period.

Case 5. M. W. Female, aged 68 years. Typhoid in 1909. Average daily output of B. typhosus in stool 50%. No history of gall bladder disease. Three treatments at three week intervals. Following the third treatment the stools became negative and remained so until seven weeks later when the patient developed some pustules about the face and ran a sub-febrile type of temperature. Since that time she has excreted typhoid bacilli in the stool intermittently. See Graph 2.

Case 6. E. H. Female, aged 65 years. Typhoid in 1930. Average daily output of B. typhosus 70%. No history of hepatic or gall bladder complaints. Three treatments at three week intervals resulted in a reduction of the total colony count of B. typhosus in the stool to about 20%. In the interim between the third and the proposed fourth treatment, the patient suffered from a cardiac disturbance that confined her to bed for two months. Treatments have not been resumed on account of this condition.

Case 7. H. M. Female, aged 48 years. Typhoid fever in 1922. Persistent carrier since that time excreting on the average of 50% typhoid daily. No history of gall bladder complaint. Three treatments at three week intervals rendered her typhoid free for a period of three weeks, and for the last two months of observation during which twelve specimens were submitted five were positive with a total average output of about 15% typhoid.

Case 8. C. E. Female, aged 40 years. Typhoid fever in 1922. Persistent carrier since that time. Average 25% typhoid bacilli in stool. No history of gall bladder disease. She was given three treatments three weeks apart followed by two at two week intervals. After the third treatment the typhoid output became irregular with periods of one to four weeks in which stool specimens were negative.

Case 9. M. A. Female, aged 46 years. Typhoid fever in 1914. Intermittent carrier with an average output of 30% typhoid in the stool during positive periods. Following the first two x-ray treatments which were given three weeks apart the patient continued to submit specimens for examinations but failed to report for further treatment until three months later. Two more exposures separated by a three week interval was given. Aside from a reduction in the colony count of typhoid bacilli on the second and third days following each treatment, the output of B. typhosus in the stool has continued to be irregular.

Case 10. G. P. Male, age ??. No history of typhoid fever. Known carrier for years. Daily average output of 90% typhoid bacilli in stool. Three x-ray treatments at two week intervals failed to effect a reduction in the total daily output of B. typhosus. Graph No. 3 represents his daily record while under observation in our medical ward.

Case 11. J. G. Male, aged 50 years. Dairyman. Typhoid fever in 1926. Persistent carrier with an average daily output of 75% B. typhosus. No history of gall bladder disease. Unsuccessful attempts were made to cure him of his carrier condition by oral phage and foreign protein therapy From July to November, 1932, he was given three x-ray treatments over the liver area, and although there was marked drop in B. typhosus output on the first and second day after each exposure there was no other appreciable effect produced. In February, 1933, we learned that he went to a hospital of his own accord for a cholecystectomy and died of post-operative pneumonia.

Case 12. E. T. Male, aged 49 years. Mechanical research assistant. Typhoid fever in 1917. Intermittent carrier, with an average output of 35% B. typhosus in stool during positive periods. He was given four x-ray exposures over the liver region at three week intervals during February, March and April, 1933. On the first and second day after each exposure there was a marked reduction of B. typhosus output, but during the intervening periods some of the plates examined contained as much as 95% typhoid bacilli.

These studies are being continued.

The results obtained in this series of individuals indicates that repeated exposure to relatively small amounts of x-ray in the treatment of typhoid carriers has favorable possibilities, but the factors which determine success or failure in each particular case are difficult to estimate at the present time. It is evident that in the majority of these patients, some active bactericidal or physiological mechanism has been operative. Following each irradiation, the total output of B. typhosus in the stool has been reduced, especially during the first two or three days after exposure. This reduction is permanent in some, transitory in others. Bacteria, as shown by Dall'Acqua and De Antoni[5], exhibit a certain degree of radiosensitivity. These workers exposed cultures of bacteria (B. coli, Cholera vibrian, B. Dysenterica Shiga, B. pyocyaneus, B. prodigiosus, staphylococci, and streptococci) to graded potentials of x-ray, and found that gram negative organisms were damaged by relatively small amounts, but larger doses were required for straphylococci and streptococci. But while this observation is of interest, the bactericidal effect of the x-ray themselves is probably negligible in x-ray therapy, and it cannot account for the phenomenon observed in carriers who were cured. The physiologic reactions appear to be of greater significance.

Arnold's work[6] has demonstrated that in normal, healthy individuals the mucosa of the duodenum and upper part of the jejunum possesses

a high degree of self-disinfecting power. This power is intimately dependent upon the physiologic condition of the stomach, and any factor which tends to stimulate the secretory activity of the gastric glands increases the efficiency of the duodenum to destroy bacterial life within its lumen. The observations of other investigators[7] indicate that all the organs in the splanchnic region participate in this increased functional activity, and Muller and Petersen[8] have shown that foreign protein injections are accompanied by increased function and capillary dilatation in the liver.

There is little known about the physiologic reactions which occur in the gastro-intestinal tract and abdominal viscera after exposure to x-ray. A few observations have been reported which are suggestive, but detailed studies concerning the effects produced by graded intensities of irradiation are wanting. In general, the fact that small amounts of x-ray are stimulating, and large doses harmful to living tissues is well known. Antonioli[9] exposed guinea pigs to x-rays, and found that weak, and not too frequent irradiations increased the bactericidal action of the tissues, especially the liver and spleen. After intensive doses, on the other hand, these same organs exhibited the most pronounced reduction in capacity to destroy bacteria. Viviani[10] exposed twelve persons to intensive irradiation (2,600 to 3,600 r units over both ventral and dorsal gastric areas at two to three day intervals) and found that gastric secretion after histamine in actions was inhibited, while Guggenberger[11] obtained higher mortality rates in mice which fed on B. paratyphosus and subjected to heavy irradiation than in uniradiated controls. Again, Petersen and Saelhof[12] in investigations on partially depancreatized dogs, found that small doses of x-ray over the pancreatic remnant stimulated its function and increased the sugar tolerance.

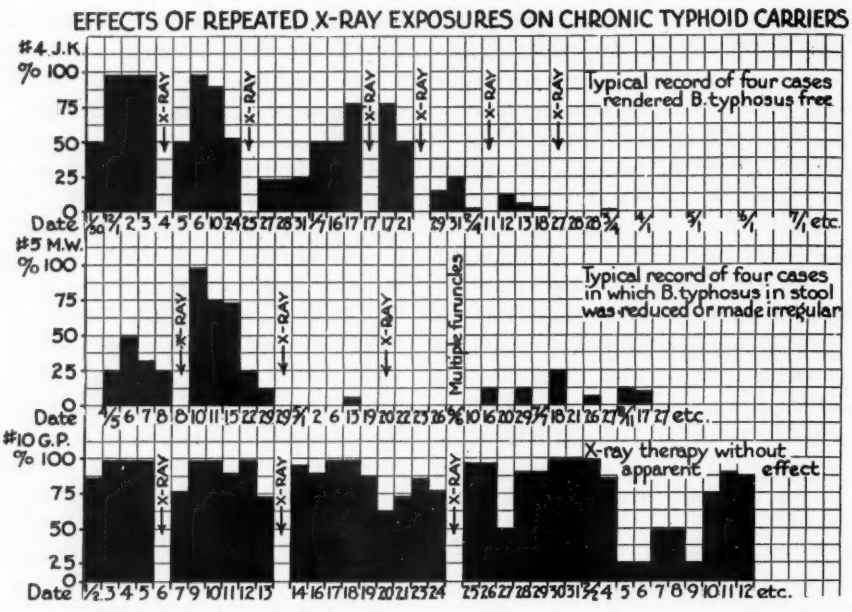
These observations on animals and normal human subjects, though not as complete as is desired, give some indication of the physiological processes that may take place after roentgen therapy. They show that small, stimulating doses of x-ray may create a condition of splanchnic activity. This activity consists of increased bactericidal capacity of the splanchnic viscera with dilatation of the splanchnic capillaries and increased functional status of the abdominal organs. In chronic carriers of enteric disease organisms the beneficial effects of such conditions may reach even farther. Merserschmidt[13] claims that in chronic typhoid carriers there are inflammatory lesions in both the gall-bladder and biliary tract, and Mallory and Lawson[14] in examining gall-bladders removed from chronic carriers found evidences of chronic inflammation in every case. There is a possibility that an active hyperemia is induced by irradiation in the inflammatory foci, which, after repeated stimulation by x-rays have a tendency to heal. Although all of our patients were normal insofar as the clinical history was concerned, various degrees of gall-bladder pathology might have been present without noticeable discomfort to the patient. It may be necessary to recognize the limitations of x-ray therapy for the carrier state where marked lesions of the gall-bladder or cholelithiasis exists. One of our patients, however, who had had her gall-bladder removed five years ago was cured of the carrier state after six irradiations at three-week intervals. This offers an interesting possibility to those carriers who have undergone cholecystectomy without cure.

In summary twelve chronic fecal carriers of B. typhosus in the city of Chicago have received a series of from three to sixteen x-ray exposure over the liver region during the past two years in an attempt to cure them of their carrier state. One-third of the cases have been rendered B. typhosus free for periods varying from ten to twenty-four months; one-third have evidenced a reduction in the total B. typhosus output in the stool, and one-third showed no change whatsoever. The results obtained are encouraging enough to warrant further study, and x-ray therapy is recommended to health agencies as a possible means of controlling the carrier state.

We are indebted to Dr. Adolph Hartung and Dr. Theodore Wachowski of the Department of Radiology, Research and Educational Hospital, for their willing assistance in this work.

DISCUSSION

Dr. Lloyd Arnold, Chicago: We still have our residual reservoirs in the recovered cases. Cleaning up the water and milk supply and isolation of cases has reduced B. typhosus reservoirs and restricted it, and now



we have the typhoid carriers. Heretofore we have had little to offer in the handling of this problem. This work was started four or five years ago, and I can say that we ran into this objection of the reaction of the x-ray treatments. As to the dosage, we are not sure. We are simply reporting our work as it is. I think the work illustrates very well the necessity of its being handled by the family physician and not by the health department. They prefer to go to the family physician. Of the patients we were able to handle, about 70 per cent. were relieved. In those whom we could not get to come for treatment, we do not get the proper results. I do think this method offers something worth while. Our results show that about 50 per cent. of these patients can be relieved and rendered B. typhosus free if we can get co-operation and treat them with x-ray. I think it offers an opportunity for the physician and x-ray man. They have to be examined repeatedly or else eliminated from the food industries. And I think if this is impressed upon them, and they are told that this treatment offers them an opportunity to return to work, we will have better co-operation.

Mr. H. E. McDaniels, Chicago: I should like to mention that in certain typhoid carriers who are x-rayed the typhoid bacilli are markedly altered in their characteristics. Even if the numbers of bacilli are not greatly reduced, their serological and biochemical reactions are often so changed as to raise the question—are these bacilli capable of causing typhoid fever? That question will have to wait, I suppose, until a suitable laboratory test is devised for estimating the virulence of typhoid bacilli.

Dr. Lars Gulbrandsen, Chicago (closing): The question has been raised as to whether repeated exposures to x-ray would produce any deleterious effect in the patient, but we have used a relative small dosage. In one instance where the patient preferred to have the treatment given by his own physician, the physician increased the dose approximately five times. The first treatment he gave him was a total amount of 2,5000 units, and this patient suffered a violent reaction afterwards. On the second or third day he had a complaint of nausea, diarrhea and vomiting. When the syndrome was completed and he returned to apparently normal physiologic status, the dose was reduced and no further ill effects were experienced. Sixteen treatments were given to this individual before he was renderd B. typhosus free.

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THE TREATMENT OF ULCER OF THE CORNEA.

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During the past eleven years, 217 cases of ulcer of the cornea were hospitalized in Cook County Hospital. The vast majority of them were of the male sex. The ages ranged from 4 months to 83 years and they varied in percentage according to the decade, from the first to the eighth inclusive, as follows: 14, 7, 17, 14, 16, 18, 7, and 5 per cent. 24% or 52 cases were classified as serpent ulcer, 20% or 44 cases were hypopyon keratitis, and 11% or 25 were perforated ulcer of the cornea.

The complications and sequelae observed in the 217 cases of ulcer of the cornea were, besides the foregoing, descemetocele 15 cases, or 7%, prolapse of the iris, 12 cases or 5%, staphyloma of the cornea, 10 cases or 4%, anterior synechia 7 cases or 3%, posterior synechia, 6 cases or 2%, and secondary glaucoma, 4 cases or 1%.

The operative treatment used in the serious cases consisted of delimiting keratotomy in 28 cases or 13%, conjunctival flap in 25 cases or 11%, paracentesis in 8 cases or 4% and Saemisch section in 5 cases or 2%.

The prophylactic treatment of ulcer of the cornea is very important, as 80% could be prevented by the proper care of foreign bodies in the cornea and the cure of chronic purulent dacryocystitis. Nearly all cases of infections of the lacrimal sac harbor microorganisms, especially the pneumococcus, and all we need is but a slight injury to the avascular cornea causing the opening up of a very small area of the epithelium which is the normal defensive mechanism of the cornea. All infections of the respiratory tract also contain bacteria which may infect the eye as suppurative nasal sinus disease, bronchitis, also infections of the throat, mouth and teeth. The normal conjunctiva is rarely if ever sterile and from 5 to 10 per cent harbor the pneumococcus or streptococcus. Foreign bodies in the cornea should be removed as soon as possible under aseptic and antiseptic precautions and be sure that the removal is complete for incomplete removal predisposes to infection and ulcer of the cornea. The infected sac may be cauterized with trichloracetic acid or resort to more radical surgery as the West or Toti operations or the complete extirpation of the lacrimal sac.

The active treatment of corneal ulcer used during the past few years at Cook County Hospital is the Gifford method; if the patient is seen in the early stage, i.e., within a few days of the onset of the corneal infiltration, the ulcer is cauterized with a 50% trichloracetic acid solution. The pupil should be widely dilated on account of the associated iridocyclitis for which 1% atropine sulphate solution is used, one drop three times a day. Radiant heat or hot fomentations should be applied to the eye every two hours for 30 minutes each. Non-specific protein therapy is valuable and should be used early and repeated as needed. Boiled milk, 10 c.c. intragluteally or typhoid vaccine, intravenously, beginning with 50 million typhoid bacilli and increased as indicated. A bacteriological diagnosis should be made as early as possible making a smear and culture from the conjunctival secretion or from the ulcer. If the pneumococcus is found to be the causative organism, apply to the ulcer some powdered optochin and also instill a fresh 1% solution of the same every two hours day and night. If there is present a chronic suppurative dacryocystitis, do an immediate complete excision of the lacrimal sac. If the diplobacillus of Morax-Axenfeld is the cause apply a 30% solution of zinc sulphate to the ulcer and prescribe a 0.25% solution for instillation every four (4) hours.

The trichloracetic acid daily treatment may be alternated with tincture of iodine, or better than the latter is Gifford's mixture which consists of 5 drops each of tincture of iodine and glycerin and 10 grains of iodine crystals. This makes a syrupy solution which is easier to apply than the tincture of iodine.

The above method of treatment will suffice in case of simple ulcer. Where the ulcer is progressive, i.e., the ulcer has a progressive infiltrated border or hypopyon and the pain and congestion is worse and the pupil refuses to dilate sufficiently, we are dealing with a pneumococcus or serpent ulcer, for which the ordinary treatment is insufficient. We must not procrastinate, but must summon surgery to our aid immediately. A keratotomy must be made re-

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sulting in the production of a hypotony. "The principles underlying keratotomy in severe ulcers are, the affected cornea is at once relieved of pressure exerted upon it by the intraocular fluids, the lymph flow kept at a very low rate by the normal tension upon the cornea is at once accelerated in the direction of the corneal incision, bringing in a fresh supply of the antibodies, leucocytes and nutrition. It is well known that when an ulcer perforates spontaneously in gonorrheal ophthalmia, it begins at once to heal especially if there is a leakage of the aqueous for a few days." (Gifford.)

A "delimiting keratotomy" (Gifford) can be done readily with good local anesthesia, illumination and fixation. It consists of a corneal incision made in the healthy cornea with a very narrow Graefe cataract knife which is held parallel to the surface of the cornea, so as not to injure the lens and cut through the entire thickness, being held tangential to the ulcer and as close as possible to its center edge. The anterior chamber must be opened daily for 3 to 5 days or longer or until the ulcer shows definite signs of regression. To reopen and empty the anterior chamber of its aqueous, one edge of the corneal incision is depressed with an iris spatula until the chamber empties itself.

In 1933, at Cook County Hospital, 37 corneal ulcers were hospitalized, of which 26 or 70%, had some operative procedure performed and of these 21 or 80% had a delimiting keratotomy done; of the latter 19 had the anterior chamber re-opened and the aqueous drained from 1 to 10 times or an average of 4.9 times.

There is no successful specific treatment of ulcers of the cornea. In 1896 and 1897 Uhthoff and Axenfeld discovered that serpent ulcer of the cornea with hypopyon is nearly always due to the pneumococcus. The pneumococcus is also found in chronic lacrimal sac suppurations. In rare cases, the diplobacillus of Morax-Axenfeld and the streptococcus may also cause serpent ulcer. In 10% to 20% of the cases of serpent ulcer, mixed infection will occur, according to Wessely, the pneumococcus with the diplobacilli or streptococci. There are four main types of pneumococci and numerous strains in each group. The pneumococcus, type 1 or streptococcus hemolyticus cause serious corneal ulceration, but it is usually either the type 3, also one of the most virulent and most frequent causes of pneumococcic ulcer of the cornea and chronic suppurative dacryocystitis and type 4.* This explains why serum therapy of pneumococcus infections fails because there are only therapeutic serums for types 1 and 2. Roemer over 30 years ago, recommended pneumococcic serum for pneumococcic ulcer of the cornea but it had no specific effect, but only that of nonspecific foreign protein therapy. Realizing that specific therapy as yet has been unsuccessful in corneal ulcers, researches have been directed toward the field of chemical antisepsis to obtain a chemical strong enough to kill the pneumococci in the tissues and yet not destroy the tissues, but this ideal as yet has not been attained. Morgenroth and Levy found that the pneumococci are very sensitive to ethylhydrocuprein HCL in the experimental laboratory, but it does not have the same effect on human corneal ulcers. However, it should be tried in all cases of pneumococcic ulcer of the cornea, as an instillation of 1% solution of optochin or ethylhydrocuprein HCL, used fresh every two hours night and day, preferably in combination with a 1:5,000 solution of oxycyanide of mercury. Topical application can be made to the ulcer in strength varying from 2 or 5% or the pure powder and 2% ointment for a more continuous effect.

The relatively better prognosis of diplobacillus ulcer when properly treated by zinc therapy should be better appreciated. Axenfeld claims that he never saw a serpent ulcer which was due to the diplobacillus that would not respond to zinc sulphate. For topical application we use a 30% solution applied daily and a 0.25% to a 2% solution as an instillation. In a sense, then, zinc sulphate can be considered as a chemical specific for Morax-Axenfeld diplobacillus infections.

According to Duke-Elder, the therapeutic effect of the ultra-violet light is that it kills microorganisms in the superficial layers of the cornea after which they are exfoliated and a vesicular reaction takes place at the limbus with emigration into the corneal tissue and finally produces regeneration of the epithelium. He states the ultra-violet light is indicated in the severer ulcers, as hypopyon ulcer in which better results are obtained than by cauterization. He warns that the serious effect of the ultra-violet

*Recently the number of types of pneumococci have been increased to eight.

light on the lens makes it essential that the lens must be excluded from the path of the incident rays.

Nugent states that healing of corneal ulcers can be effected by ultra-violet radiation, without the necessity of curettement or cautery of the ulcer and that it produces more rapid sterilization of the cornea than any other means he has tried. Peter, also, commends the use of the ultra-violet treatment of corneal ulcers for the same reasons but adds, that there are cases in which only the actual cautery will arrest the process.

The following general measures may be used to build up resistance and stimulate the reparative processes in the ulcer. Foreign protein therapy, anti-luetic treatment where indicated, liver extract, iron, arsenic and copper in anemia and cod liver oil, viosterol and calcium in phylectenulosis. The elimination of chronic foci of infection, as, lacrimal sac, tonsils, teeth, nasal sinuses, prostate, seminal vesicles, Fallopian tubes and so forth.

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DISCUSSION

Dr. Walter Stevenson, Quincy: Dr. Yerger has given a complete and concise resume of this very important disease and his statistics are interesting and valuable. I do not know of any eye disease that so taxes the resources of the oculist, and yet at times seems so utterly out of control, and so often goes on to disastrous end results. Until a few years ago I saw a great number of serpigenous ulcers, most of which came from nearby coal mining regions following slight injuries in the mines. I do not know why injuries of that type are so prone to develop serpigenous ulcers. Since these coal mines have closed down, I do not see so many of these corneal ulcers. I have not used delimiting keratotomy as described by Gifford and used by the essayist, but can testify to the value of Saemisch sections, although the end results are disappointing in most cases. Paracentesis through the base of the ulcer when it is not centrally located has sometimes been effective. Occasionally I have made a marginal incision at 6 o'clock which evacuates the hypopyon. This should be followed by the instillation of eserine and daily spreading of the incision with a spatula.

A number of years ago, Prince of this city reported excellent results with the use of a copper ball heated by a flame and held as close as possible to the ulcer, the procedure being repeated several times each day. This gave the suggestion that if one could devise a means of producing radiant heat of definite temperature the results might better. V. Mueller of Chicago constructed for me a platinum electrode fitted into a small parabolic reflector which can be attached to the ordinary eye speculum. Without anesthetic the speculum is placed and the electrode heated, the application lasting for varying lengths of time depending on the condition of the ulcer. Boric acid solution is dropped onto the cornea during the application in order to prevent drying and destruction of normal corneal tissue. The instrument has been very useful in my hands, and I shall pass it around for your inspection. A number of years ago Dr. Meyer Wiener reported good results following the use of powdered methylene blue dusted on the ulcer. I believe it has merit. The use of foreign protein I believe useful. Theoretically, pneumococcus antiserum should be specific, and if the organism types No. 1 or No. 2 I see no reason why the serum should not be used. Optochin has proved disappointing to me. If the experience of Nugent can be duplicated the use of ultraviolet applications offers a most encouraging outlook.

I wish to emphasize the importance of prophylaxis in this disease. The careful removal of foreign bodies and necrotic cornea, aseptically, followed by proper antiseptic treatment, and more important than these, the protection of the eye by the closed lid, which can of course only be secured by a properly fitting eye patch, are measures which no competent oculist should neglect. Almost all foreign body cases should be seen a second time, and as often thereafter as may be necessary to ascertain that the corneal wound is well epitheliated, that is, that it does not stain with fluorescein. An irrelevant remark in this discussion includes the precaution of an accurate record of visual acuity in every foreign body case before dismissal.

Thank you for the opportunity of discussing this very important paper.

Dr. H. E. Middleton, Alton: In the treatment of infective ulcer, methylene blue powder dropped in and massaged in, in my hands has outweighed any other form of treatment. A thermaphore heated to 137 degrees held on the ulcer for 55 or 60 seconds is also good therapy. In regard to foreign protein I use typhoid paratyphoid vaccine intravenously, but I start out with 150 millions of dead typhoid paratyphoid bacilli. This dosage was arrived at accidentally. A nurse gave 50 million when 5 million was ordered. I have given initial doses of 200 million. It makes the patient sick, but the effect on the ulcer has been remarkable. I have found this latter treatment effective in hyperplastic iritis, cyclitis and beginning panophthalmitis.

A dendritic ulcer in my opinion points to teeth. I had a case in which a negative x-ray came back, and the thing spread until it became central, always remaining superficial but destroyng vision. I had another dental checkup, and we found pathology along the peri-

dental membrane, and upon removal the ulcer healed. Another case had a negative physical examination, beautiful teeth, no pathology that we could find. However, she had had one tooth extracted, and we found a granuloma on the little bit of root that was left, and the ulcer promptly healed upon its removal.

Dr. Charles C. Clement, Chicago: I think most of us are inclined to continue conservative treatment beyond the point that is conservative. If we are going to make an opening in the cornea and reduce tension, the time to do so is when there is some cornea to save. If after a few days, we find the ulcer is not under control, I think we should open the cornea by any method we prefer, then the tension is reduced and the ulcar is more apt to get well. My own preference is for the electric cautery. This seems safer in my hands than the knife.

Dr. C. F. Yerger, Chicago (closing): I wish to thank those who have so kindly discussed my paper. I have nothing to add except that I am a little disappointed in not bringing out more general discussion. I think you all have had a lot of experience in the treatment of corneal ulcers, and that more of you than have done so could continue this discussion, I think the subject is important and that this could be discussed once a year before this Section with profit to all.

BODY TEMPERATURE IN EPILEPTICS

I. RADEFF, M. D.

DIXON, ILL.

In the Dixon State Hospital a large number of epileptics have been admitted in the last ten years. Immediately after their admission they are placed in bed in the hospital building for observation, where temperature, pulse and respiration are charted two times a day. Observing for a long time, I found these patients run very irregular temperatures, so much that it almost enables me to diagnose whether the patient is feeble-minded or epileptic from observing his chart. Looking through the limited literature I was not able to find any description of this condition.

Clifford, Allbutt, Bodswell and Chapman state that the body temperature in normal individuals varies 0.5 degree during the twenty-four hours. According to Howell, it varies one degree, being the lowest body temperature at six to seven a. m. It rises slowly during the day to reach the maximum at five to seven p. m. and falls again during the night.

I picked ninety female epileptics at random but of sufficient intelligence for co-operation. Practically all of them showed intellectual deterioration, they all have grand mal attacks, some grand mal and petit mal. The number of convulsions varied from one or two in two or three months to four or five a day. The physical examination did not reveal any gross pathological condition. They ate the same kind of food, performed almost the same exercises. Their ages were between seventeen and thirty years and received 1.5 to 3 gr. phenobarbital a day. Their temperatures were taken at 9 a. m. and 4 p. m. by mouth daily for two weeks continuously by a nurse, assisted by an attendant. Several thermometers were used and they were kept in the mouth two minutes, all the readings being charted by the nurse. It was found that not a one of these cases had a normal temperature constantly. The variation of the latter was very irregular, sometimes there was elevation in the morning, sometimes in the afternoon, or maybe a constant elevation for a few days, then a drop or sudden rise and then a gradual drop extending over two or three days until normal, then again rise. Also the rise of temperature was irrespective to the number of convulsions. To cite one case for instance, there was elevation during the day, she had two convulsions; the next day temperature dropped to normal and the patient had two more convulsions without subsequent rise.

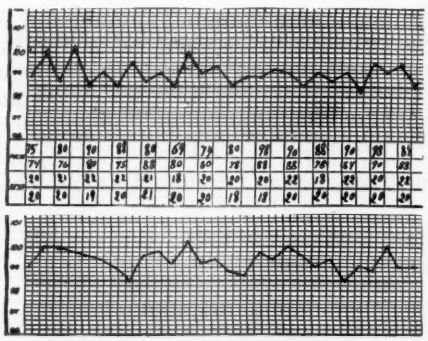

Fig. 1 (above) shows average epileptic's temperature with no convulsions during this period. White cell count 16,000.

Fig. 2 (below) shows similar variation of temperature as Fig. 1. This patient had one convulsion the first day, one the third day, four on the fourth day and one on the fifth day. No convulsions after white cell count 7,000.

During the fourteen day period when the temperature was taken, forty-four patients did not have any convulsions but the temperature was irregular just the same. Sixteen had only one convulsion, twelve had two convulsions, seven, had three, four had four, one had six, two had seven, three had nine and one had thirteen convulsions. The fact is that the case that had thirteen convulsions did not show so much fluctuation of temperature as the other cases.

The highest temperature recorded by mouth was 101.6, the lowest 97 F. The tendency to subnormal temperature was not very frequent, it was mostly to above normal.

The pulse rate was out of proportion with the temperature, usually being between seventy-five and eighty.

The respiration varied between eighteen and twenty-four a minute, also asynchronical with the temperature but in close relation with the pulse.

The white cell count of the blood was taken once only and showed a variation between 6,000 and 20,000, forty-two patients having normal white cell count. Thirty-three had between 11,000 to 16,000; fifteen had between 15,000 to 20,000.

It is a well established fact that epileptics when in status epilepticus develop high temperatures. I had opportunity to observe some cases with 107 to 109 F. temperature. Also very small number of them have one to two degrees elevation before, during, or after a convulsion necessitating them to go to bed.

Whether this irregularity of temperature is due to a central origin, in support of which theory we may mention mental deterioration, or due to constipation (autotoxemia), to which almost all of these patients are subject, I do not know and it is not my intention to discuss this subject here, but I wish to emphasize the fact that such conditions exist and it could be added to the symptoms of epilepsy.

Of course, this applies to institutional cases of epilepsy. I had no opportunity to study non-deteriorated intellectually cases as we see outside of the institution.

State Colony.

FACIAL TULAREMIA

Diagnostic Difficulties of This Unusually Located Primary Lesion

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Before 1924, Tularemia was but seldom recognized, for up until that time only approximately 15 cases had been reported from a few regions. It is known at present, however, that

Fig. 1. Primary tularemic lesion below left mandibular ramus with marked submental adenopathy.

the disease is widely distributed all over the United States as well as Europe and Asia, and that the number of reported cases has reached well above the thousand mark. Since the recognition of its prevalence there have been encountered from time to time, cases of tularemia with symptoms and signs that varied from the classical descriptions to such a degree that a diagnosis was difficult or even impossible on a clinical basis alone. The cases in which such difficulties are encountered can be divided into two groups.

The first group represents cases of tularemia in which the primary lesion is in the typical lo-

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cation, but in which either the secondary constitutional symptoms or the secondary toxic, dermatologic manifestations predominate to such an extent as to completely obscure the true nature of the underlying disease. Thus, cases of tularemia have been recorded which clinically simulated typhoid fever[1], malaria[2], subacute bacterial endocarditis,[3] tuberculosis,[4] influenza,[5] septic infections[6], and cholangitis[7]. In other cases the primary lesion was overshadowed by the secondary manifestations of pleural effusion[8], lung abscess[9], retropharyngeal abscess[10], pericarditis with effusion[11], and jaundice with cholecystitic symptoms[12]. In still other cases skin affections resembling sporotrichosis[13], erythema multiforme[14], pustular dermatitis[15], herpes[16], acne[17], and syphilid like eruption[18] have been reported as masking the original tularemic infection.

The second group comprises cases of tularemia in which the primary lesion is in such an atypical site so as to prove another source of error and lead to an incorrect diagnosis. Usually the location of the primary lesion is on the fingers in about 80 per cent. of the cases.[19] At times, however, if entirely not demonstrable as in the glandular type, the primary lesion may be situated so atypically that everything but tularemia is considered during the first examination. This is especially likely to occur when the patient gives no history of handling rabbits or when the patient's occupation does not provoke inquiry in this direction. Cases of tularemia have been reported in which the primary lesion was found in the following unusual sites; on the perineum, associated with multiple ulcers on the glans penis[20]; on the buttocks[21]; on the right side of the abdomen[22]; on the left lower abdomen[23]; on the thigh[24]; on the leg[25]; on the knee[26]; in the temporal region[27]; in the posterior part of the neck[28]; and on the gums around the lower teeth[29]. The occurrence of a primary lesion of tularemia just beneath the left mandibular ramus, such as observed in this case herein reported, has not been, as far as could be ascertained, previously described.

REPORT OF CASE

History: Y. B., a student, aged eighteen years, living in Chicago, presented himself at my office on December 18, 1933, complaining of "loss of pep," fever, sore throat for the past two weeks and a swelling under the chin and above the left clavicle of eight days duration. The patient thought that he had the "grippe" which would pass away shortly. However, because of the persistence of the general symptoms and especially because of the appearance of the swellings, he was urged by his family to consult a physician. Incidentally, he mentioned that for the past several days he has had, just below his left jaw a painful "pimple" which he would like to have examined since it was more painful and more persistent than any of the pimples he ever had.

His past history as well as that of his family was essentially negative. His personal habits were good. There was no history of any undue stress or strain or recent exposure to patients with influenza. He had had a mild acne vulgaris and comedones for years.

Physical Examination. The patient was a well developed and nourished young white male. The temperature was 101° F, the pulse 84, and the respirations 20 per minute. The blood pressure was 124 systolic and 80 diastolic. The results of the general physical examination were essentially negative except for the acne and the painful pustule below the left jaw and the left-sided adenopathy on the neck. The urine was negative. The white blood cells numbered 12,000 of which 60 per cent. were polymorphonuclear leucocytes, 38 per cent. lymphocytes and 2 per cent. monocytes. The red blood cells numbered 5,000,000 and the hemoglobin was 75 per cent. (Sahli).

Skin. Aside from the acneform eruption on the face, forehead, and upper part of the back, the patient presented on the lower border of the middle of the left jaw a postule which was about 3.5 mm. in diameter. (See Fig 1.) It was tender to touch, painful and surrounded by a slightly elevated, reddened area of about 2 cm. in diameter. No definite red streaks were seen, but the tenderness seemed to radiate toward the enlarged glands. The latter were quite firm and the overlying skin did not show any changes except for the inferior deep cervical node which was softer and the overlying skin mildly reddened.

Course. As a result of the negative general findings, the described skin lesion with the associated adenopathy was considered the cause of the patient's symptoms. Since the patient had a habit of "squeezing his pimples," a secondary infection of one of them with a resulting lymphangitis and lymphadenitis of the lesion draining glands was thought of. Therefore, a high caloric bland diet, with plenty of fluids, sedatives, and hot dressings to the lesion were ordered and the patient was advised to remain in bed.

On December 29, 1933, when next seen his temperature was normal, but he still felt below par. The pustular skin lesion was now replaced by a fairly deep "punched-out like" ulcer about 5 mm. in diameter. The base of the ulcer was reddish and fairly clean and the discharge was seropurulent. The borders of the ulcer were distinctly elevated, moderately indurated, dusky red and mildly tender. The regional glands were more enlarged, but not changed otherwise. The ulcer's appearance and the unilateral adenopathy strongly suggested a luetic infection, but the patient emphatically denied any possible direct or indirect exposure to

syphilitic individuals. In spite of the denial, blood was drawn for serology. The ulcer was dressed with a 5 per cent. ammoniated mercury ointment.

When the Wassermann report returned negative, the patient was seen by a consultant who also considered the lesion as "very likely a primary syphilitic lesion" in spite of the negative Wassermann report and advised repetition of the serology and a dark field examination. Tuberculosis adenitis and the possibility of actinomycosis was also considered, the latter especially because of the cervical nodes, but no etiological factors could be ascertained.

The second Wassermann report was also negative. Another dermatologist was consulted and at this time tularemia was mentioned in the differential diagnosis of the ulcer and the associated adenopathy. Upon questioning, the patient now related that he worked on Saturdays in a grocery store where rabbits were also sold during the holiday season and that he used to dress rabbits. The latter were usually brought from Wisconsin, but he did not know what kind they were. A specimen of blood was drawn and sent to the Illinois State Health Department, Chicago Branch, for an agglutination test with B. tularensis. The report returned positive in a dilution of 1:640, establishing thus the diagnosis of tularemia.

When next seen, the gland nearest to the ulcer was found softened, and on pressure to discharge a brownish yellow, thick pus through the opening of the now almost completely healed ulcer. The discharge persisted for about two days and then ceased. There was a gradual decrease in the size of the inferior cervical node, but the submental, submaxillary and anterior cervical nodes remained large and firm and were very annoying to the patient.

Treatment. An antiserum for the treatment of tularemia as described by Foshay,[30] was kindly supplied to me by Dr. Foshay. As suggested by Foshay,[30] the patient was first tested for any sensitivity to the serum. Because of a mild reaction after the skin test, the serum was given intramuscularly instead of intravenously, on successive days (Feb. 6 and 7), 15 c.c. each time. February 10, an intradermal test with tularense skin test suspension was as yet mildly positive. February 12, the patient developed a severe serum sickness manifested by giant urticaria, gastro-intestinal disturbances, anuria (for 20 hours), and arthralgia. The serum sickness abated on February 17 and the patient continued to improve since, with the glands constantly decreasing in size.

A second agglutination test on March 15 was reported positive for B. tularensis in a dilution of 1:320. The glands were markedly diminished in size, at that time, and the intradermal test gave only a very faint reaction. When last seen, May 15, the patient felt well and the only remnant of the tularemic infection was a small reddish scar at the site of the ulcer.

COMMENT

In 1927, Netherton[31] wrote: "Tularemia presents such a distinct clinical picture that only a lack of knowledge of the disease or failure to bear in mind the possibility of its occurrence can be responsible for the erroneous diagnosis of typhoid fever, septic infection, glanders, antrax, sporotrichosis, actinomycosis, felon of the bone, and primary syphilis, each of which has some symptom or symptoms identical with those of this disease." The veracity of the above statement is undeniable. Nevertheless, it seems, first, that not enough physicians are acquainted with it, and secondly, that some cases of tularemia present such atypical features that their publication is deemed warranted. Hence, this case too, is presented both with consideration of its diagnostic difficulties and interesting features. The latter comprise the atypical location of the primary lesion; the probable pathogenesis; the striking resemblance to a primary syphilitic lesion; and the therapeutic result of the anti-tularense serum.

Since actual injury during the handling of infected rabbits or other proven carriers of the B. tularensis usually determines the location of the primary lesion, the latter is most commonly found on the hands or fingers, the next common site being the conjunctiva. The unusual locations about the head, legs, abdomen, perineum, and gums as stated above were all due to the bites of the tick or deer-fly—with the possible exception of Belote's[22] and Kirkwood's[5] cases. Perusal of the literature makes me believe that the case reported here is probably the only one with a primary lesion on the jaw which has not been caused by the bite of a tick or deerfly. Foshay,* too, thinks that this is the first case of a primary "facial" tularemia east of the Mississippi.

The next unusual point in this case is the pathogenesis. It is easily understood how injury to the hand or fingers with the infected material—i. e., a piece of rabbit bone, a sliver from rabbit crates, or the intimate contact of the infectious material with an abrasion or open wound, or the bite of a tick or deerfly infected with B. tularensis will lead to a tularemic infection and development of a primary lesion. It is, however, less evident how a primary lesion, if not due to a tick or deer-fly bite, will develop on the face, unless one assumes that the contagion is deposited there with the fingers that came in contact with the infective material. It is presumed that in this case, the patient with

his hands contaminated from dressing rabbits, either squeezed or scratched a "pimple" on his jaw, thus determining the site of the primary lesion. Only one other case where a similar pathogenesis can be considered is the one reported by Kirkwood,[5] where the primary lesion was on the gums and which he believed "either due to contamination with the fingers or from eating insufficiently cooked rabbit meat."

The primary lesion of tularemia is usually described as a painful, red papule, the center of which becomes necrotic and is liberated, leaving a small, sharply circumscribed "punched-out" ulcer, with an elevated reddish periphery and a grayish-red, necrotic base. In this case, however, the primary sore, when first seen, appeared as an elevated painful pustule, and the resulting ulcer, although "punched-out" was not deep, had a fairly clean red base, and the discharge was of a more serous than purulent character. The lesion looked so much like a "hard chancre" that in face of a negative Wassermann report, a consulting dermatologist advised a repetition of the serology and a dark field examination. Then too, the regional glandular masses with the exception of one gland nearest to the ulcer were firm and painless.

The result of the therapy with the anti-tularense serum is worth while mentioning. Although the serum was given about eight weeks after the infection, it seemed to have been of definite value as evidenced by the disappearance of the swollen glands and the faint reaction after the second intradermal test.

SUMMARY

1. A case of tularemia with the primary lesion on the left jaw is reported and the diagnostic difficulties encountered are enumerated.

2. The presumption is made that the B. tularensis may be carried by the contaminated fingers to any part of the body, so that a primary lesion may occur at the most unusual sites.

3. In the case of any chronic ulcer with an associated regional adenopathy tularemia should be ruled out at the first examination by history and agglutination test.

4. In the tick and deer-fly free regions of the United States the wearing of gloves while handling rabbits is the best and only prophylactic measure against tularemic infection and this fact should be impressed upon the general public.

I am indebted to Drs. Harry A. Singer and Max S. Wien for their suggestions and information.

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SYSTEMIC INFECTION FROM THE COLON

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Functionally the colon may be divided into the absorptive portion, consisting of the cecum, ascending and transverse sections, and the expulsive portion, including the descending colon, sigmoid and rectum. Both portions vary from three to five feet in length. The smallest lumen is in the sigmoid and the widest in the ascending colon, and, separating the cecum from the small intestine is the ileocecal valve, the only one-way valve in the gastrointestinal tract. Thus the enteric canal is so constructed, both anatomically and physiologically, as to furnish adequate culture media for the growth of certain bacteria, but that does not prove that the rather hypothetical toxins liberated by intestinal bacteria are responsible for the feelings of ill-health so frequently associated with intestinal stasis. Finding a preponderance of a certain organism, or an organism not usually present in the stool does not certify that it is the cause of systemic disease. Vaccines prepared from organisms recovered from the stool are being used, but a positive skin test simply means that the individual is sensitized to that specific organism. It does not necessarily follow that the bacteria are responsible for symptoms. Probably all of us are sensitive to one or more strains of our intestinal bacteria.

The cecum is the region in which absorption can readily occur, and intestinal bacteria, or their toxins, probably invade the tissues at this point. The dryness of the feces in the transverse and descending colon is one of the features which prevents absorption of toxins and the passage of bacteria—unless, because of some abnormality, the feces remain in the liquid state.

The right colon drains into the portal circulation, which point is important when diseases of the liver and gall bladder are considered. In part, also the colon empties into the hemorrhoidal veins, thence to the iliac veins by which toxins may be delivered anywhere in the body where tissue resistance is lowered. The B. coli, B. typhosis, B. Welchii and the Streptococcus fecalis are so frequently recovered from gall stones, the gall bladder wall, the articulations and genitourinary tract, that it is impossible to doubt the intestinal origin of these pathologic conditions.

Natural tissue drainage is a very important factor in the determination of chronic infection. If drainage from an infected area is free and unimpaired the infection will automatically clear up unless fed by some other focus behind it. Thus a pyelitis may disappear following correction of a colon infection, but it cannot occur in the presence of ureteral spasm or stricture. Frequently free drainage is interfered with by allergic reactions in and about the tissues. In such cases desensitization must accompany any active therapy designed to improve drainage.

The propulsive action of the colon depends on the longitudinal taenia coli, which have the ability to relax as well as to contract. They act as elevators and lift the cecum up the right side, in some cases as much as three inches[1] working somewhat like an accordion. This contraction of the taeniacoli produces the haustrations seen on an x-ray film.

These contractions form the mass movement by which the cecum and ascending colon empty their content over to the left side where formation and expulsion of the stool occur. The final mass movement in expelling the fecal content occurs with the invagination of the sigmoid into the rectum and a second immediate invagination to expel any remaining feces.[2]

It is well recognized that a large number of acute conditions and many chronic ones, are the result of infections, but the process does not stop here. The bacteria lodge in the surrounding tissues and irritate them with toxins, the effect depending on the virulence of the organism and the type of tissue invaded and the class of tissue for which the organism has a specific predilection, as the colon and more especially the pelvic bowel though composed of several tissues has but one, the mucosa, especially prepared to resist infection. There are times when all resistance seems to be lost and the host is overwhelmed by the organism.

It is the function of many tissues to reproduce themselves, the stimulus to do so being the demand put upon them or the presence of some irritant. In most cases damages are re-

paired except in highly specialized cells, in which case there is an inherent superabundance to allow for wastage. In the case of a lymphatic gland a local irritant may bring on an enormous reproduction of the cells such as is seen in Hodgkin's disease, and in infections which overwhelm the resistance of the host, a picture resembling Hodgkin's disease is produced. Pern[3] suggests "the future may show that in malignancy the individual has lost all resistance to some particular organism that has been irritating him for a long period of time." The uterine muscle, which has such great powers of overgrowth in pregnancy, is also seen to do so under some abnormal stimulus, causing myomata. This daily invasion of nonvirulent streptococci could bring about this condition.

In most of the colon and rectal inflammations, benign or malignant, there is found a coexisting infection of the digestive tract higher up and the presence of tooth and tonsil disease is remarkably frequent. This low-grade infection, chronic in character, may be a progenitor of malignancy, therefore the greatest safeguard we can offer our patient is the eradication of all chronic infections.

Children contract streptococic infections soon after birth, the organism finding lodgement in the lymphoid tissue of the pharynx, from there it spreads to the nasal mucosa and sinuses, and it is not long before dental caries sets in and later on in life, pyorrhea. The transmutability of the streptococcus through its various types even to the pneumococcus has been well established and it would be foolish of us not to think it had varying periods of virulence and innocence during its sojourns in the individual during his lifetime. Many people go through life more or less well in spite of it, but all are better without it. The recognizable diseases it produces are really only a small part of its depredations. It interferes with growth of body and mind. It is the cause of neurasthenia and hysteria, that great mass of undiagnosed humanity. It overstimulates the thyroid causing hyperactivity of the sympathetic nervous system. It also causes damage to the endocrine glands, producing melancholia.

One of the great features of this chronic infection is an enormous drain upon the calcium supplies of the body. This is shown in many ways. Rickets, which is accepted as due to lack of the proper calcium mobilizing vitamins in the presence of greatly diminished calcium supplies, will necessarily be far more prevalent than it would be with an abundance of calcium. This depletion naturally makes for frailty of the bony structure. We know that calcium is essential for the repair of tissues and is in great demand in this chronic infection. There is one side of this calcium depletion which seems to have escaped the notice of many and that is its relation to the makeup of the individual. The synapses in the cord, which are buffers to impulses passing centripetally, owe their resistance largely to the various salts in the blood, and of these calcium plays a very important part. If it is in reduced quantities the normal inhibition is impaired, allowing for exaggerated responses. This is why such persons jump when a door is slammed, and why sick people are invariably so irritable. In such conditions it is difficult to exercise that mental inhibition which should be the aim of all.

Infecton of the deeper layers of the mucosa of the colon and rectum constantly recurs while a stream of organisms come from the throat or bronchial tract and it is obvious that our first efforts must be directed toward stopping this stream of organisms and then see if the local tissues still have enough resistance to destroy those organisms which have already been localized. Many such cases clear up permanently after this has been done and diathermy applied through the part to improve its nutrition.

Infection with a hemolytic streptococcus or a streptococcus viridans is always a serious problem, because it does not cure spontaneously and adequate treatment must be applied to eradicate the infection. If there is any doubt as to the presence of infection, resort must be made to the culture tube because mere inspection is unsatisfactory.

In many instances where less severe rectal disturbances are noticed self-treatment is instituted, although when definite local symptoms develop, a physician is consulted. Unfortunately even in the hands of a medical man many of these symptoms are spoken of as biliousness, indigestion, dyspepsia, rheumatism, neuritis, arthritis, autointoxication or reflex pains and then these symptoms are treated empirically with sedatives, analgesics, massage, various types of heliotherapy, electrotherapy and other modifications

of physical therapy. These cases of so-called muscular rheumatism, sciatica, lumbago, various neuralgias, and asthma are merely manifestations of infection located in organs more or less remote from the point at which these symptoms are evidenced, and it is these incomplete or mistaken diagnoses by which internal organs are innocently accused of being the general causal factors and unnecessary medication or unprofitable surgical operations are directed toward these organs. Since we have learned that many symptoms, general in character, are due to infections originating in parts of the body lined with mucous membrane and usually remote from the regions in which the symptoms are manifested, many of these tissues, organs and cavities have been examined and in many instances, definite foci have been discovered from which these infections originated.

The teeth, tonsils, the various sinuses, bronchial mucosa, kidney, uterus and adnexa, prostate, gall bladder, appendix, colon, and finally the rectum may each and all, singly or in combination, contain definite primary or metastatic infective processes the absorption of whose products may be responsible for many symptoms heretofore treated by experiment. The symptoms of disturbed intestinal function, such as indigestion and autointoxication have been too long treated by the administration of cathartics and enemas and the modification of the patient's diet, or the presence of pain in the rectum together with bleeding or other discharge from the anus been dismissed with a prescription for salves or suppositories. All of these procedures fail completely or afford but transitory amelioration. Neuralgia, rheumatoid pains, dizziness, nausea, headache, blurring of the eyes, fatigue syndrome, constipation, halitosis, loss of appetite, abdominal distress, recurrent herpes, unexplained rises of fever, pruritus, eczema and disturbed sleep are frequently due to focal infection.

Though the individual may successfully combat the effects of the focal infection its continued toxins lower his resistance and when some second infection invades it may terminate fatally. Thus spondylitis, osteomyelitis, pyonephritis and pulmonary abscess may develop from colon or rectal disease which has been overlooked as possible foci of infection.

Autointoxication is quite generally recognized as evidence of a disordered intestinal canal, and under proper therapy many cases respond to treatment. However, it is not universally appreciated that the sigmoid, rectum and anus are fertile sources of focal infection.

While many sufferers recover promptly, almost miraculously, after the removal of a septic pocket, the clinician sometimes notes with disappointment that following the removal of a focus or foci of infection, the results show little or no improvement in the health of the patient. Occasionally his disability has been increased, or new and more severe symptoms, the direct result of the operation have developed, for example, lung abscess. One naturally asks himself: Why should so many patients fail to respond more favorably to this rational form of therapy? It would appear that the chief reasons for lack of improvement in these patients are: 1. an inadequate appreciation of the causal relationship of focal infections to various chronic conditions; 2. an incomplete diagnosis, and, therefore, an incomplete plan of treatment for the individual patient; 3. a lack of proper cooperation in both diagonsis and treatment between the physician in charge of the patient and the consultant surgeon or dentist who removes the foci; 4. an inadequate follow up of the patient while under treatment.

It is unnecessary to refer to the evidence upon which the principle of focal infection is based, if the frequency with which the removal of foci of infection as recommended by the profession may be taken as proof of the recognition of its importance as a cause of disease. However, the manner in which foci of infection in the terminal bowel may affect the body locally or generally is not so universally appreciated.

Following an injury, bacteria invade the traumatised area where they may or may not produce local symptoms, depending upon the severity of the inflammatory reaction.

If definite local symptoms develop, the patient may consult his physician or may institute self-treatment. The diagnosis is comparatively easy and, providing the focus can be removed or drained properly, the local symptoms are relieved and, if treated early, the damage to distant parts of the body repaired or prevented from developing. Unfortunately, local symptoms are often absent; the bacteria continue to multiply, pro-

ducing toxins which are absorbed, causing systemic disease by intoxication.

In a restricted meaning focal infection implies the production of a toxin in the infected foci, which toxin is carried by the blood and the lymph to the region made morbid by it, or to the nerve centers controlling these tissues and, by its effect on these nerve centers, causes morbid condition through the action of these nerves, and are separate and apart from the tissues made morbid by such infections.

In other instances the primary focus is merely a nesting-place from which the bacteria are picked up by the blood or lymph and transplanted to other locations in distant parts of the body where they form secondary or metastatic foci of infection, before the patient consults his physician. Because these secondary infections have a special affinity for diseased tissue, it is more apt to attack the diseased areas. The bacteria found about many diseased areas may be accounted for in this way when they were not present at the onset of the morbidity.

Metastatic foci may be found in any part of the body, but are most commonly present in the joints, the endocardium, gall bladder and kidneys, less often in mucous membranes of the lower respiratory and gastrointestinal tracts, muscle and tendons, eye and ear. Local symptoms are more commonly present and more severe with metastatic foci. The character of the symptoms upon which the diagnosis of metastatic infection depends is determined by the location of the lesion and by the activity of the primary focus responsible for the lesion. The injured part may recover from the first infection with or without the removal of the primary focus, but after repeated reinfection, structural changes occur which result in permanent disturbances of function and, unless the area can be removed by operation, complete amelioration of the local symptoms is impossible.

If these few essential points referring to the development of focal infection from primary and metastatic foci are borne in mind, it will be less difficult to understand the lack of uniformity in the results of treatment following the removal of foci of infections in patients suffering from apparently similar clinical conditions. One can appreciate more fully the importance of a complete diagnosis before recommending a plan of treatment. In the search for foci of infection as a cause of local disturbances of function or of general ill-health, it is not sufficient to confine one's efforts in diagnosis to their detection within the sigmoid, rectum and anus, but to determine whether such foci as are found are causing the systemic disturbances; that is, are they the primary cause of the disability? Perhaps more commonly the active foci are secondary etiological factors affecting the progress of a diseased condition due to another cause. For example, our patient may have inflamed anal crypts which discharge free pus but the cryptitis is but part of the proctitis higher up. If the focus of infection wherever found is the primary cause of the disability, its removal will prevent the possible future development of systemic disease from the area in the pelvic bowel. If focal infection is the primary cause of ill-health, and all foci of infection have been found and can be eradicated, we may expect that our patient's health will improve, and a cure or a marked amelioration of symptoms will result. If the infection in the rectum is but a contributing cause, the treatment of such foci is necessary but must be considered as supplementary to the recognized treatment of the cause of the primary condition.

For example, Mrs. G. Y., age 35, had a baby ten years ago. The delivery was difficult and there resulted a very deep cervical laceration and also a rent in the perineal body. The immediate repair was not very successful but she did not have anything further done. A short while ago she suffered a heavy, full feeling in the rectum at all times and recently has been much disturbed because of a burning pain at the anus and bleeding after each bowel movement. Examination disclosed a gray fissure at the anus which bled after even careful examination. The sphincters were spastic and tender. The rectal mucosa was engorged. Vaginally, the uterine cervix was very large and covered with granulations. This large eroded mass resembled a carcinoma. The primary infection here was in the cervical ectropion which by pressure on the vaginal septum caused the proctitis as a secondary lesion, the anal fissure being but incidental. To have removed only the fissure and relaxed the sphincters was to obtain only temporary, if any, relief; the cervical lesion was the primary lesion. *This differentiation may appear too obvious to mention,* but one sees too frequently patients suffering from a mild exacerbation of hemorrhoids or fissure, in whom foci of definite infection exist elsewhere and thus the primary cause of ill-health has been overlooked.

Bacteria: The bacteria usually found in focal infections are the streptococcus and the pneumococcus, and of the less virulent strains of these, but other bacteria may be found. Many

genital disturbances in the female are due to colon bacillus infection. No one strain of bacteria has been found constant in all cases of focal infection, although the streptococcus viridans seems to be more nearly constant than any others. It may be that one kind of bacteria, as the tubercle bacillus, starts the focus of inflammation and some other kind, as the streptococcus viridans, enters the focus secondarily, where it forms the toxins which are transmitted from the focus; or more than one kind of bacteria may be working in the same focus, both producing toxins at the same time.

Toxins: The proteins of the body are made up of eighteen kinds of molecules, known as amino acids, each protein having its own combination of animo acids. Each amino acid contains one or more carboxyl radicals, COOH, or carbon dioxide with hydrogen atom attached. Whenever there is dead tissue in the rectum or anus in the form of a gangrenous hemorrhoid, debris in an anal crypt or exuded serum and fibrin in a diseased mucosa or submucosa, this dead tissue may become infected with bacteria which bacteria separate the carbon dioxide from the hydrogen atom of the carboxyl radical, changing the amino acid into an amine. The amino acid is a necessary unit of food for the body but the amine is not only in most cases, abnormal to the body tissues, but in excess doses, it is usually toxic. Amines vary in their physiological action toward the body and also in their solubility, some being more soluble in water and others being more soluble in oils. Absorption and transmission of these amines in the body may vary with their solubility in the adjacent body fluids. So the kinds of amines absorbed and passed into the body vary, first with the amino acids converted into amines and then with the solubility of the amines in the adjacent body fluids. The amines being absorbed from any focus of infection, pass into the lymph or blood by which they are transmitted and brought into contact with some distant tissue, or the nerves supplying such tissue, which they damage by their toxic effect, producing the morbid condition recognized as disease.

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HEART DISEASE

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Heart disease was responsible for approximately one out of each four deaths that occurred last year in Illinois. To cardiac impairment is attributed more than twice the mortality charged against any other cause whatsoever. Mortality ascribed to heart disease last year in this State, was greater than the aggregate mortality attributed to cancer, tuberculosis, pneumonia, diphtheria, scarlet fever, typhoid fever, whooping cough, measles and the complications of childbirth.

Among people under 55 years of age, heart diseases cause substantially more deaths than tuberculosis, and nearly twice the mortality attributed to cancer. Last year in Illinois heart disease was responsible for a greater volume of mortality among people under 30 years of age, than the aggregate attributed to typhoid fever, scarlet fever, diphtheria, whooping cough, measles and poliomyelitis.

It is estimated on apparently substantial grounds that there are living in Illinois no less than 140,000 people with hearts impaired to a degree that gives definite disability ratings to the patients. These patients, according to well informed observers, live an average of about seven years after the cardiac impairment reaches the point that classes the patient with the chronically ill. Thus the 140,000 living victims of heart impairment in Illinois are destined to survive for an aggregate of approximately 1,000,000 years under a restricted handicap that seriously interferes with economic usefulness, as well as with the pursuit of social and cultural activities. Their care, no doubt, will involve the expenditure of a vast amount of time, effort and money.

Mortality from heart disease, moreover, has increased tremendously during the last twenty years. In 1913 there were 7,171 deaths attributed to cardiac disturbance in Illinois, giving a rate of 122 per 100,000 population. In 1933 the number of fatalities was 19,900 and the rate 254. Thus we find that fatal heart impairment now occurs twice as frequently as it did, two short decades ago.

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These rather nebulous figures that approach astronomical magnitude in respect to disability, are a sufficient reason for choosing heart disease as the topic of this paper. No health officer can justifiably ignore or wink at a condition to which one-fourth of the population seems destined to become the fatal victims. The medical profession can ill afford to neglect the study of a problem that involves a volume of chronic illness that ranks in magnitude second only to chronic rheumatism.

A closer inspection of the statistics brings to light some very encouraging features of the otherwise dark picture. There is revealed also the promise of considerable success in future efforts that may be directed at control with a program planned and executed along proper lines. During the last decade in Illinois the death rate from all forms of heart disease among people under twenty years of age has declined by one-half. For this group the death rate in 1922 was 23.9 per 100,000 while in 1932 it was only 11.3.

Some improvement has marked the course of mortality in the twenty to thirty-five age group. For this block of the population the rate fell from 34.2 to 28.8. While not a very pronounced favorable difference the decline appears to be significant.

For all older age groups the rate has advanced from a slight increase among those between 35 and 44 to a very wide margin that trends rapidly upward with the rising age level. Since 1925 the death rate from heart disease among people who ought to be at the very peak of usefulness, those between 45 and 54 years of age, has jumped from 206 to 250 per 100,000, an increase of 21 per cent. in eight years. Thus while a decline in the younger age groups offers encouragement and suggests the possibility of control, the heavy and rapidly increasing losses of those at an age which ought to place them in the very prime of life cries aloud for a more vigorous and effective program.

Another encouraging aspect of the problem is the decline in mortality from endocarditis. Acute forms of endocarditis were charged with a death rate of 7.7 per 100,000 in 1920 and only 3.2 in 1932, a reduction of more than one-half. This type of heart disease is believed to result very largely from bacterial invasion. We know that great improvement has taken place in the control of many of the communicable diseases during the last decade. The evidence, therefore, indicates that more effective control over the infectious diseases is the avenue of promise in preventing a substantial proportion of cardiac impairment.

Endocarditis is the dominant type of fatal heart disease among younger people. It is responsible for no less than 55 per cent. of all fatal cardiac impairment in people under 35 years of age and for 30 per cent. in the 35 to 44 age group. On the assumption that this type of the disease is preventable, the importance of control measures is magnified by the fact that heart disease causes one-third more deaths than does tuberculosis in the 35 to 44 year age group and ranks second only to tuberculosis as the most fatal disease in those under 35.

TABLE 1. DEATHS FROM HEART DISEASE AND TUBERCULOSIS, CERTAIN AGE GROUPS
ILLINOIS, 1932

Age in Years	Heart Disease		Tuberculosis
	All Forms	Endocarditis	
Under 35	882	465	1987
35 to 44	1160	341	872

Numerous studies have been made that show the prevalence of heart disease. One of the most recent was in Massachusetts where a corps of workers took a chronic illness census in a house to house canvass that covered one per cent. of the population. Based upon this sampling it was estimated that in the entire population of that State there are at any one time 84,000 people with chronic heart disease and 2,600 of these are completely disabled. Applying these findings to Illinois it would appear that at any one time we have fully 140,000 people with seriously impaired hearts and that more than 4,000 of that number are totally disabled.

From voluntary reports of noncommunicable diseases rendered by practicing physicians to the State Department of Public Health in New York, De Porte estimates that there are 300,000 cases of heart disease in that State. These are patients who have consulted physicians with respect to their health with the result that cardiac impairment was discovered. Among the noncommunicable diseases reported in New York State, 4 per cent. were ascribed to heart disease. The New York data are in line with those of Massachusetts and other studies.

Among 5,509 grammar grade children enrolled in the schools of 37 different communities throughout down-State Illinois, physicians on

the staff of the State Department of Public Health, who examined these children during the last fiscal year, found 3.2 per cent. with defective hearts. These findings agree almost exactly with those of the United States Public Health Service survey of 17,974 school children in Illinois, Missouri and Florida. In that group 3 per cent. were found with cardiac impairment. These data indicate that there are about 30,000 elementary school children in Illinois with defective hearts.

In a study of the medical records of recruits drafted into the United States Army for World War duty, it was found that 5 per cent. showed evidence of organic heart disease, and that 90 per cent. of those with demonstrable cardiac impairment were rejected as being unfit for military duty. At the same rate we should expect to find among the 2,000,000 people in the twenty to thirty-five age group in this State fully 100,000 with impaired hearts.

Three years ago the Heart Council of Cincinnati made a medical survey of 1,000 white male machine and hand tool operators and the year before the same organization conducted a similar survey of 1,000 adult male office workers. Among the machine and hand tool operators, most of whom were between 25 and 45 years of age, 46 per cent. had detectable heart lesions and 31 per cent. had lesions that were regarded as significant. About one-third of the office workers had detectable heart lesions.

At the University of Illinois, Beard has examined a large percentage of the young men and young women who have matriculated at that institution since 1918. Among this selected group, which probably represents the highest physical and mental health level of the young manhood and womanhood of Illinois, he found heart impairment in from 1.5% to 4% of each class. Of the 1934 class members 2.8% had defective hearts. Beard's studies indicate to him that there is a close relationship between the cardiac lesions and the past histories of the patients with respect to communicable diseases.

"The experience of each year," he says, "emphasizes the relation of communicable diseases to heart defects. These diseases are frequently followed by endocarditis and consequent organic disease of the heart valves. The prevention of cardiac disease is largely a problem of controlling these infections."

Bigelow and Lombard point out as a result of their survey findings in Massachusetts that the chronic morbidity rate among the group having had previous attacks of rheumatic fever is nearly twice as great as among those who had not. These same observers list frequent sore throat, growing pains, frequent colds, malaria, typhoid fever, diphtheria and scarlet fever as predisposing factors to chronic ailments, the most important of which is heart disease. They also found that failure to eat protective foods, such as milk, fruit and green vegetables, as well as the confirmed lack of exercise and the taking of laxatives, loomed large as apparent predisposing causes to the chronic, disabling diseases of middle and later life. Among these chronic ailments, heart impairment ranked first except for chronic rheumatism.

Of no less significance the Massachusetts survey indicated that when parents or grandparents were reported to have died of chronic heart disease, the incidence in families was 50 per cent. higher than when such was not the case. This observation probably does not denote hereditary predisposition to heart disease, from a physiological basis, so much as predisposing family habits and unhygienic practices that are handed down from generation to generation by example.

From the available evidence a few rather definite conclusions may be drawn.

1. Heart disease is a dominant and growing cause of death that cuts short the life span of a significant proportion of the population, long before the natural wearing processes of senility should begin to manifest themselves.

2. Substantial improvement has taken place during the last decade in mortality from heart disease among younger people, the result, apparently, of increasingly effective control over communicable diseases.

3. The incidence of heart impairment is found to be significant among all age groups, rising in prevalence from about 3 per cent. in elementary school children to 5 per cent. among those of military age, and to much higher proportions among people in the higher age groups.

4. A substantial proportion of heart impairment may be prevented by the control of communicable diseases and by the application of available knowledge with respect to diet and personal hygiene.

5. A great deal of physical disability from

cardiac impairment is subject to prevention by the early detection of heart lesions, followed by appropriate treatment and modified habits of life.

What has been accomplished indirectly, suggests the character of future programs against heart disease. Efforts should be concentrated on the younger age groups, particularly children. The first line of attack should be against communicable diseases of all kinds, especially those caused by streptococcus organisms and the spirochetes.

The second step in the offensive should relate to the improvement of child health through better diet, the correction of physical defects and better habits of personal hygiene. The third step in the program should be the detection of heart impairment in its early stages, and the planning of life for individuals accordingly.

This outline is nothing more nor less than an abbreviated outline for a general public health program. The prevention, control and alleviation of heart disease, depends upon the execution of a program that will prevent and control diseases in general and which will tend to raise the general level of individual and public health. I have used heart disease merely to illustrate the need for a more extensive practice of preventive medicine. To a public health officer this need manifests itself on all sides and in a multitude of ways.

By every concept of logic and reason the medical profession should take the leadership in initiating and executing programs of preventive as well as of curative medicine. For this task they are especially prepared by training and experience. They are closely organized, with county societies as the basic unit. This makes possible the development of programs with the county as a population unit.

So far organized medicine has been slow to initiate programs of preventive medicine. The public, however, has become restive in the belief that available medical knowledge ought to be more generally applied for the benefit of society. Evidence of public demand is apparent on all sides. In Massachusetts, a state that from colonial days has blazed the way in public health movements, the State Legislature commanded the Department of Health, against the advice of its director, to initiate a program of cancer control that involved the hospitalization of patients and the holding of clinics. Funds sufficient for the purposes in view were appropriated and the project is now regarded as a permanent part of state health work.

In New York the State operates pathological laboratories, venereal disease clinics and subsidizes county hospitals that meet specified requirements concerning the care and treatment of patients, the treatment of whom is regarded as of public health significance. The trend toward socialization of medical practice has reached varying levels in the other states.

Evidence of the same trend is witnessed in other developments. The organization of parents and teachers is playing a more and more important part in promoting programs of public health. In cooperation with school boards they raise money for the payment of nurses, for the holding of clinics, for the correction of physical defects and for projects in nutrition.

An association controlled by laymen has promoted the program for the prevention of ophthalmia neonatorum, and has succeeded to the extent of securing effective legislation with respect to compulsory prophylaxis in this and other States.

Health insurance schemes are coming more and more to popular attention, and they appear to be meeting with no little favor. Through the influence of labor unions and large employers of labor, which are able to swing into line big blocks of membership, a health insurance project in Los Angeles County has reached the point where scores of physicians and nurses are employed to handle the medical business. For a fee of $2 per month per family this organization is able to furnish medical service of no second-rate character to thousands of people and at a profit. This particular agency is controlled by two physicians whose training and qualifications are above reproach. At the moment they are on trial initiated by the County Medical Society on technical charges. Whatever the outcome of that trial, which aims at expelling from organized medicine the two physicians, the result is not likely to defeat for very long the movement they have started.

These developments are offered as straws in the wind. They point toward a strong undercurrent in the social fabric that demands the spreading by some means of medical service, and particularly the practice of preventive medicine.

By recognizing the situation and taking the initiative, organized medicine can direct the course and determine the character of medical practice. The county society is the logical unit through which programs should be initiated. By organized effort the county society could work out practicable methods that would insure the vaccination and immunization against diphtheria of every child in the county. Plans could be executed for the medical examination of every school child at least twice during his elementary school career. Arrangements could be made for the correction of physical defects when discovered. The county medical society could be made the medical and health educational center of the county. Parran of New York and McLaughlin of the United States Public Health Service recommend the development of county hospitals as centers for modern equipment which is needed to give adequate medical service on a strictly individual basis, which now is far beyond the economic reach of a great many people.

These suggestions I offer as worthy of the most earnest consideration. The public has been taught that many contagious diseases can be prevented. They are told in voices shouted from the house tops that heart disease as well as many other chronic ills can be prevented to a substantial degree or greatly curtailed. The notion that the utilization lags far behind the availability of medical knowledge, is constantly urged upon the public. Thus a demand has been created for more general medical service and this demand is apt to grow steadily.

Where the organized medical profession takes the lead in programs of a public or quasi-public nature, the public will turn naturally to them for guidance in all matters medical. Where they fail to take this initiative the public will turn naturally for guidance to those elements who do take the initiative in this field.

DISCUSSION

Dr. Andy Hall, Mt. Vernon: I am much interested in the array of figures just presented by Dr. Jirka. This subject should be of particular interest to physicians. According to th American Medical Association's record of physicians who died in the United States last year, of the 3,209 whose deaths were reported in the JOURNAL 1,131 died of heart lesions. In other words, more than one out of three physicians who died in 1933 died from a heart lesion, and it is reasonable to assume that the same type of lesion will cause the death of one out of every three physicians sitting in this room today.

The doctor has called our attention to the fact that the mortality from heart disease in people under 21 years of age has been practically cut in half in recent years. This improvement has been due to our efforts in limiting contagious diseases and the resulting infections that follow that cause heart disease. That is no doubt the reason for the decreased mortality in the age group under 21 years. But he tells us that in the older age groups it is increasing.

We have spent great efforts in educating the public toward the prevention of such diseases as diphtheria, smallpox and typhoid fever. We have urged upon them the necessity for the removal of physical defects, such as bad teeth, tonsils, etc., and the necessity for doing other things that would lessen the incidence and the sequelae that follow such conditions. But there is one great factor upon which he touches only lightly, and that is syphilis. In a recent article published in the Journal of the American Medical Association, the statement is made by men who are looked upon as authorities in that line, that of all adults dying from cardiovascular diseases, syphilis is accountable for one-fourth of the deaths. While we have put forth great effort in educating the lay public in the prevention of many diseases, we have done practically nothing concerning the prevention of syphilis. How many physicians in this audience have gone before lay groups for the discussion of syphilis? I see about five individuals responding. Syphilis is one of the three great etiologic groups causing cardiovascular disease. It accounts for one-sixth to one-fourth of deaths, and at the present time it is the only one of the groups in which preventable measures are known and available. Are we doing everything that is reasonably possible to prevent syphilis, or prevent these grave consequences of syphilis? Not only is it responsible for many diseases of the heart that cut short the lives of some of our most valuable citizens, but it is responsible for about 15 per cent. of all blindness. It is responsible for many premature and stillbirths. It is responsible for one out of every seven men and one out of every seventeen women sent to the hospitals for the insane in this state. Syphilis ranks with tuberculosis, pneumonia, and cancer, but unlike these plagues, with the available means at hand for its prevention and cure, there is no reason why it should not be eradicated. It is not eradicated because we have not put forth the efforts we should to suppress this disease. It must be taken care of early in its incipiency, during the primary stage. Many of us have hesitated to institute treatment for syphilis until we could get a positive blood Wassermann. That is too late. The most satisfactory results are obtained in the primary stage, by dark field diagnosis which can be made in about 98 per cent. of the cases if the specimens are examined within twenty-four hours. If the specimen is collected and examined within three days, the Department of Public Health has found that they could get positive findings in about 85 per cent. of the cases, and if treatment is begun in the early stages, during the time when we can make a dark field diagnosis, you get an average of about 71 per cent. cures. But if you wait until you get a blood Wassermann the average

cure is only about 53 per cent. and a longer delay means even less. You will not get these cases in the primary stage until we can educate the public on the cause of syphilis, its disastrous results, the ways of prevention and the necessity for seeing a physician early. Every group of high school boys and girls should have a few lectures on venereal diseases. Infection usually occurs between the ages of 17 and 25. If they go untreated many of them develop heart lesions, and that is one of the reasons why the mortality from heart disease in the upper age group is not diminishing.

Every County Society should have at least one program each year on syphilis, and physicians should disseminate the knowledge needful for the public to understand something about syphilis, how it is transmitted, its terrible results, the necessity of seeing a physician early. Physicians should disseminate the knowledge needful for a clear understanding of this disease, and parents, teachers and guardians should open wide the gates of knowledge so that the public may enter. The facts may be revolting, but it is better that our sensibilities should be shocked than that people should be ignorant of facts upon which depends sight, hearing, intelligence, health and the lives of the children of men. Let us do our best to tear aside the thick curtain from behind which people are hiding their eyes from many unpleasant but needful truths.

Dr. N. S. Davis, Chicago: This is a very interesting paper on the subject of heart disease and the prevention of that type encountered in the earlier decades of life. There is one point that I think should be emphasized in connection with heart disease in the latter decades which for the most part is due to arteriosclerosis or to arteriolosclerosis with hypertension. In these cases the involvement of the heart is really secondary to a disease of the blood vessels. Other diseases of the arteries that are associated with cerebral hemorrhage or thrombosis and with chronic nephritis in these age groups are also on the increase. If all of the diseases due to disease of the arteries are grouped together we find that in those over 45 years of age almost 50% of deaths are due directly to vascular disease. This does not include deaths due to the pneumonias or to diabetes in which arterial disease is so often an important contributory cause of death. If progress is to be made in the prevention of these deaths in those over 45 years of age, we must concentrate on the study of diseases of the arteries rather than on the changes in various organs secondary to the changes in the arteries.

Dr. Frank J. Jirka, Springfield (closing): I want to thank Dr. Andy Hall for elaborating on this particular aspect of the problem. He told us something about the deaths attributable to syphilis, and he mentioned something, if I recall, about the care of the pregnant woman. I think an early diagnosis of syphilis in the newborn, or a prenatal diagnosis of syphilis in the mother, should be resorted to a little more frequently than has been done heretofore. Dr. Hall also called attention to the dark field test for syphilis before the Wassermann test is obtainable, and I believe the physicians of our state should avail themselves of the tests we are willing to make. He also said something about physicians lecturing throughout the state on the subject of syphilis. Recently we engaged the services of a lady representing the Social Hygiene association of New York. There is no reason why we should bring in an outsider to teach our children. We have plenty of brilliant men and women in our own state who could give adequate lectures on sex life in such a way as to translate scientific language into language which is comprehensible to the layman. Crime and insanity is increasing by leaps and bounds; 10 per cent. of insanity is said to be due to syphilis, and there is probably the same percentage at least in crime. If we are going to have a decent life in the future, I think we should discuss sex life and venereal diseases with the children of this day—and this should be done by the medical profession, not by laymen or lay organizations. I received a letter recently from the American Association for Birth Control relative to the use of contraceptives, and they ask the question why do lay organizations have to interest themselves in matters such as this? This is another problem for the medical profession.

Relative to Dr. Davis' suggestions, I think they were valuable suggestions and I thank him for them, but I believe and think that in the very near future we will find that the so-called coronary arteriosclerosis or atherosclerosis of the coronary arteries bears some relationship to diet and to the increasing different types of feeding. I am of the opinion we should consider more and more the chemistry of foods, and its relationship to human pathology.

THE TREATMENT FOR GENERAL PARALYSIS WITH CEREBRAL LIPOIDS AND TRYPARSAMIDE

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In 1922 Von Jauregg[1] published the results of his work dealing with the malaria inoculation of patients suffering from general paralysis of the insane. He noted that a certain percentage of the patients so treated attained a state of remission sooner, and also that the percentage of remissions was greatly increased over that which had been previously obtained by using only symptomatic treatment. Since the introduction of therapeutically induced malaria in the treatment for general paralysis, many different forms of therapy have been in vogue. However, in spite of the variety of different methods, all seem to have as their basic principle the production of a hyperthermia. As far as is known there has not yet been advanced any satisfactory explanation as to the reason why a patient subjected to fever therapy should show any mental or physical improvement, or even why there should be ex-

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pected any special change. In other words, it seems that fever therapy such as is employed in the treatment for general paraylsis is used merely because the percentage of remissions is thereby increased, and apparently the basis of the treatment is empirical. Of course no treatment should be condemned because it rests on a purely empirical basis, but likewise it should not be accepted as the last word in therapy simply because some patients attain a state of remission. A fact that is generally lost sight of in the various reports is that approximately half of the patients subjected to fever therapy show no improvement, and further, some of the patients showing no improvement continue in a progressive downward course resulting eventually in death, this in spite of the most intense treatment. Hence it seems that although fever therapy, regardless of the form or type used as long as it is satisfactorily carried out, is beneficial in some cases, in other cases the treatment does not exert any apparent beneficial effect. This latter fact is lost sight of in the different reports in which the emphasis is usually placed on the percentage of remissions obtained, and the failures are dismissed by merely recording them as such. The majority of reports themselves are concerned with the rapidity of obtaining the remission, the length of remission, the advantages of a new method, laboratory changes, and the social adjustment following treatment.

The writer in no way discredits the use of fever therapy as a therapeutic measure in certain cases of general paresis. Moreover no particular method of obtaining the hyperpyrexia seems to be superior except in so far as mechanical difficulties are concerned. Each particular method has its staunch advocates, but a comparison of the results obtained shows that each is productive of approximately the same final results. Hence the conclusion is that all methods, which are productive of satisfactory fever rises, are able to bring about such changes that result in a remission in a certain percentage of patients. The fact that all individuals do not respond favorably may be explained by the suggestion that the patients that do not show the same response as that occurring in the individuals who show improvement following treatment, is that therapy in certain individuals brings about changes, and that these changes are secondary to the primary changes which bring about the remission. This will be later enlarged upon on the basis of oxidation-reduction reactions.

It is known that in the absence of any specific treatment about 3.5% of patients having general paralysis attain a state of remission.[2] Further this state of remission is just as complete, and possibly of longer duration than that obtained by the use of fever therapy. Hence it may be said that some individuals having general paralysis, can by changes or reactions not brought about by the use of external or internal therapeutic agents, and in the absence of specific treatment, attain a state of remission that is just as good and complete as that obtained by the most efficient forms of fever therapy. With the advent of arsenicals in the treatment of this condition, the percentage rate of remission was increased by a few per cent. The remission rate was still further increased by the use of the various fever methods of treatment. If the remission is the same no matter what the treatment or the lack of it, it seems logical to believe that similar reactions or changes have occurred in those attaining a state of remission, and because of the changes there occurred the state of remission. These statements are rather broad generalizations and are no doubt open to various objections. However, it is the writer's belief that all that occurs in the cases that go into a state of remission whether or not treatment has been given, is that something takes place which in turn instigates certain changes which in themselves are responsible for the remission or abeyance of mental symptoms.

While laboratory studies dealing with paretics who have attained a state of remission without any treatment are rather uncommon, it is known that some patients having general paresis may have such a reaction that will cause the disappearance of the syphilitic antibodies from both the blood and spinal fluid, with a resultant normal spinal cell count, and a flat Lange collodial gold sol curve. This[3] was demonstrated on a series of undisputed cases of general paresis to whom no treatment of any nature had been given, and who years later at the time of the study presented negative serology for syphilis on both the blood and spinal fluid. In these cases there apparently had occurred "something" which had caused the disappearance of the syphilitic antibodies in the absence of any type of specific treatment. In addition to this series of patients

having general paresis, data[4] were also collected on a series of patients who once had showed a positive blood serology for syphilis, and who had at a later examination a negative serology for syphilis on the blood serum; all this in the absence of any treatment. Thus it seems reasonable to believe that some individuals having syphilis in some form are able to bring about the necessary changes that are needed to cause a disappearance of the syphilitic antibodies from both the blood and spinal fluid. Hence in the absence of treatment, both remission of mental symptoms and reversal of positive serology to negative may obtain.

Another observation[5] in regard to paresis is that practically all individuals so afflicted show a marked disturbance in the basal metabolic rate, and the chances are about even that the rate will be increased over normal. Since the basal metabolic rate is really a measure of the oxidation-reduction processes that occur in the organism, it follows that in paresis there occurs some marked disturbance in the oxidation-reduction processes.

In 1931 Choroschko and his co-workers[6] introduced cerebral lipoids in the treatment for general paresis. He postulated the belief that there occurred in this condition a disturbance of the lipoidal metabolism, and he believed that he supplied this deficiency through the medication of the lipoids. The results obtained by this form of treatment indicated that a beneficial effect was exerted on the paretic process. In 1933 work was undertaken at the Kankakee State Hospital under the direction of the author. In this cerebral lipoids prepared by Dr. Klein of the Wilson Laboratories, Chicago, were used. The original report[7] dealing with this form of non-fever therapy was based upon results obtained on twenty-five patients, and the final conclusion was that this form of treatment was equal to or surpassed the effectiveness of fever therapy in producing remissions. The method had in addition the advantage that it was ambulatory in nature, produced remissions much sooner, and further, there needed to be no selection of cases. Undoubtedly selection of treatment cases plays a very important part in the final results, because it is well known that certain types and races respond better to fever therapy than do other types or races. Because of the fact that all patients were put on treatment in the order of admission to the hospital, there is no doubt that if a selection were originally made, the final remission percentage would be much greater than that reported. The remission rate was 48%. All of the patients showed an improvement in the physical condition, and all but three showed mental improvement. In some patients mental improvement was not expected, for the degree of dementia was so marked that they were deemed unfit for treatment; they were merely treated in order not to have a selected group of cases.

It is believed that a second report on this type of treatment will be of additional value, for with the passage of time a greater number of patients have been treated, there has been a greater period of observation, and the duration of remissions is better evaluated. The method of carrying out the treatment procedure has not been materially changed in any way from that originally outlined. The lipoid preparation is given in one cubic centimeter amount every other day, intragluteally, and in conjunction with the lipoids, tryparsamide is given in weekly intervals in the usual three gram dosage. All treatments are continued until a stationary condition obtains. This is usually obtained after approximately forty lipoid injections, or about twelve weeks. In the cases where trypsaramide is not tolerated, bismuth in water soluble form, or mercury salicylate is given.

To date, forty-four patients have received what is termed sufficient treatment to reach such a state that further treatment produced no appreciable further change. In all cases there has been noted a marked improvement in the physical condition, and this has been accompanied by a general feeling of well being (although this is common in paresis; it does not seem to be an elation or euphoria). It about half of the cases, a good remission was obtained, and it was of such a character that the patient in question was deemed to have improved sufficiently to warrant his release from the hospital. These decisions were reached by the medical staff, not by the writer.

Of the patients who showed no further change upon additional treatment, 20, or 45%, were considered sufficiently improved to leave the hospital. This percentage rate agrees quite closely with the original figure of 48%. Of the remaining patients twelve showed a marked im-

provement mentally, although not enough to leave the hospital, six patients showed practically no change in their mental condition, and in the remaining six patients, no special mental change was observed. However, it is felt that if a selection of cases had been practiced, the majority of the twelve patients responding unsatisfactorily would have been deemed unfit for treatment, because of their far advanced dementia which was evident on admission.

In regard to the gains in weights, there occurred an average gain of 19.6 pounds, plus or minus 3.1 pounds. The greatest gain in weight was 47 pounds, and the least gain was one pound. In no case was there observed a loss of weight. In all cases, even those showing no special mental change, a decided improvement in the laboratory findings occurred, both on the blood and spinal fluid, with a return to within normal limits of the spinal cell count, a betterment of the serological reactions and in some cases negative serology. However, as has been showed the results on the serology may be questionable.[8]

A rather important finding as far as explaining the action of the lipoids was that the basal metabolic rate of the patients treated by lipoids returned to within normal limits after completion of treatment. Similar studies on untreated paretics, and on those who had been subjected to fever therapy, showed that the metabolic rate tended to be elevated or abnormal even after treatment. In other words, patients treated by lipoids have a normal metabolic rate, while those treated by fever therapy or untreated have abnormal rates.

The theory advanced as to why results ought to be expected following treatment by cerebral lipoids and trypsaramide is based largely upon the metabolic studies. Because of the agreement secured in metabolic studies, it is felt that paresis is primarily a disease of disturbed metabolism, and it is because of this abnormal metabolism that the physical and mental symptoms appear as they do.

All cellular activity depends upon two diametrically opposite reactions, namely, oxidation and reduction. Thus, when a stimulus is applied to a cell, the first reaction taking place chemically is one of oxidation. For some as yet unknown reason, the oxidation process proceeds to a certain stage and then stops. Just why it normally progresses to this state is not known. The stage of oxidation is in turn followed by the stage of reduction, and the sum total of this reaction is that it restores the cell to an again reactive state. The reduction stage has also a limit to its reaction; it merely continues to a certain stage and then ceases. In certain conditions the oxidation stage is interfered with, and increased, and in these conditions there may be an actual cell destruction. This is seen in the conditions that are commonly associated with endocrine imbalances, such as hyperthyroidism, etc. Assuming that a condition should exist, in which oxidation proceeded unchecked, the final result would be the destruction and death of cells that were so affected. Dinitrophenol has the effect of increasing oxidation, but it apparently does not lead to any marked destruction of cells. However, it may be safely stated, that a cell whose normal oxidation-reduction mechanism is disturbed or changed, ought to react in an abnormal manner.

Paresis is a condition in which the brain and spinal cord are primarily attacked. Just why the syphilitic process should attack these structures is not known, but on the basis of data[9] collected, it seems as if there exists a specific neurotrophic strain of spirochetes, and infection by this strain usually leads to paresis if other conditions of environment (precipitating factors) are present. Pathologically in paresis there occurs a rather diffuse destruction of cerebral cells, and the mental symptoms are indicative of a widespread involvement of the cerebral tissues, rather than focal involvement. Further, it is known that a close examination of the social and economic adjustment history of an individual who has developed mental symptoms of general paresis, usually shows that certain peculiarities existed years before the actual manifestation of acute mental symptoms, or to the occurrence of such symptoms that pointed out the existence of a mental abnormality to the members of the afflicted person's family or his acquaintances.

On this basis it is safe to say that the cerebral cells of an individual who later develops mental symptoms clearly recognized by the laity, had for many years an abnormal reaction of the cerebral cells. It is the abnormal state of the cerebral cells that accounts for the abnormal behavior; or, as stated, abnormal oxidation of

cells certainly leads to abnormal cellular reactions.

It is known that certain individuals having syphilis have an increased metabolism, and the term of syphilitic hyperthyroidism has been introduced to clinically designate this condition. Thus, if syphilis can give rise to disturbances of the oxidation-reduction mechanism, and if this disturbance leads to certain mental conditions, it seems reasonable to believe that this is the basis of the reaction in paresis. In paresis the syphilitic process is primarily confined to the cerebral tissues, and the occurrence of mental symptoms should be expected to be rather gradual in onset.

Since there have been no studies of the metabolism in the "asymptomatic" type of neurosyphilis it cannot be definitely stated that there occurs in that condition an abnormal metabolism, but it seems reasonable to believe that the metabolism is abnormal, for syphilis is known to produce hyperthyroid symptoms in some cases, and in paresis it is known that the metabolism is abnormal. Hence, from deduction it is believed that an abnormal metabolism occurs in the "asymptomatic" neurosyphilis.

That there occurs an abnormal lipoidal metabolism in the brains of those dying from paresis has been pointed out by Choroschko who observed that there was a dimunition of the lipoidal content in these cases.

The theory offered as to why cerebral lipoids and trypsaramide should be beneficial in paresis is that the lipoids act primarily upon the oxidation-reduction mechanism and in that way restore a normal metabolism. With the return to normal of the metabolism, the cerebral cells are restored to normal activity. The action of the trypsaramide is to control the syphilitic process itself.

This theory can explain why a patient subjected to fever therapy may, or may fail, to show improvement. It is assumed for purposes of explanation that fever therapy stimulates the production of a substance that is capable of stabilizing the metabolism. The cases where improvement does not occur, does not have this substance produced. It likewise explains why a remission can occur without treatment.

CONCLUSIONS

1. Cerebral lipoids in conjunction with trypsaramide exerts a favorable effect in producing remissions in general paresis.

2. A theory has been advanced to explain the occurrence of mental symptoms in paresis, and as to why cerebral lipoids ought to exert a beneficial effect.

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6400 Irving Park Blvd.

DOES INSURANCE INCREASE THE PRACTICE OF PREVENTIVE MEDICINE?

Even the most enthusiastic advocates of insurance admit that sickness insurance has done little to develop or encourage measures for the prevention of disease. Individual immunization, regular health examinations and measures for the detection and treatment of incipient disease are, in all insurance countries, largely dependent on other agencies than insurance. The insurance practitioner is too hurried and is held too closely by restrictions imposed by administrators to give much attention to preventive work. Such preventive work is more extensive, reaches a larger percentage of the population and is better supported by the general public and the medical profession in the United States than in countries having compulsory sickness insurance.—From "Sickness Insurance Catechism."

One ship drives east, and another west
With the self same winds that blow.
'Tis the set of the sail,
And not the gale
Which decides the way to go.

Like the winds of the sea, are the ways of fate
As we journey along through life;
'Tis the will of the soul
That decides the goal.
And not the calm or the strife.

SYMPTOMS IN EARLY STAGES OF INDUSTRIAL PLUMBISM

In dealing with the problem of industrial plumbism, Roy R. Jones, Washington, D. C. (*Journal A. M. A.*, Jan. 19, 1935), believes that emphasis should be placed on those signs and symptoms commonly exhibited early in the course of absorption or intoxication. All observations should be considered in their relation to the entire clinical picture in order to arrive at a diagnosis, especially in the preintoxicative stage. All changes, listed as presumptive evidence should be thoroughly investigated. From a practical point of view it is believed that, by careful watching for an early reticulocyte response, the physician will be able to detect evidence of lead absorption prior to the development of definite plumbism.

DEFINITELY RADICALS

There are four radical groups in the United States:

1. The Socialists, who propose by educational methods and use of the ballot to bring about the common ownership of production, the chief industries manufacturing necessities, and of transportation.

2. The Communists, represented by the workers' party, who demand a state supremacy which will own, operate and conduct everything, and which supremacy they believe can only be established by an armed revolution.

3. The Syndicalists, whose basis of organization is belief in the ownership and control of all industries by the workers themselves, and who advocate the resort to sabotage and general strikes to attain their ends.

4. The Anarchists, who repudiate government of any kind and seek its destruction. Purely intellectual Anarchists are not dangerous, but active Anarchists have been guilty of many crimes against society.

DEFECTIVE AMMUNITION

When the doctor arrived he found the patient in tears.

"Cheer up, my good man," he said, "you'll pull through."

"It isn't that, doctor," groaned the patient, "but just think of all the money I've spent for apples to keep you away."—*London Humor.*

Society Proceedings

COOK COUNTY

CHICAGO MEDICAL SOCIETY

Regular Meeting, Wednesday February 6, 1935

Auditorium—Medical and Dental Arts Bldg., 185 North Wabash Avenue.

Program Presented by the Faculty of Rush Medical College, Chas. H. Phifer, presideng.

Renal Hypoplasia—Robert H. Herbst and Carl Apfelbach.

Discussion—Herman L. Kretschmer.

Surgical Management of Acute Intestinal Obstruction—Edwin M. Miller.

Discussion—Arthur H. Parmalee; Dr. Gatewood.

Clinical Significance of Meckels Diverticulum—Albert H. Montgomery.

Discussion—Joseph Brennemann.

Regular Meeting, Wednesday February 20, 1935

TUBERCULOSIS

Tuberculosis Among Nurses and Physicians—J. A. Myers, Professor of Medicine, Minneapolis, Minn.

Public Campaign Against Tuberculosis—Kendall Emerson, Managing Director, National Tuberculosis Association, New York City.

Recent Research on Tuberculosis—H. J. Corper, Director of Research Laboratories, National Jewish Hospital, Denver, Colorado.

Cavities and Collapse Therapy—Benjamin Goldberg, Associate Professor of Medicine, University of Illinois.

Discussion: Henry C. Sweany, Jerome R. Head, Clarence L. Wheaton, Walter H. Watterson, Richard Davison, Samuel A. Levinson, Robert H. Hayes.

KANE COUNTY

The February meeting of the Kane County Medical Society was held Wednesday evening, February 13, 1935, at the St. Joseph's Hospital in Aurora.

Dr. Philip H. Kreuscher, a past president of the Illinois Medical Society, was the speaker of the evening, and he gave as his topic "Back Ache," which was very interesting both to the surgeon and general practitioner.

After the scientific session was concluded a business meeting was held, there was a roll call of the past presidents, the following being present: Drs. W. H. Schwingel, George Haan, H. A. Brennecke, J. W. Dreyer, and R. H. Graham, of Aurora, Dr. L. J. Hughes of Elgin, and Dr. Carl Struve of South Elgin.

The new officers were formally inducted into office:

Dr. Karl J. Kaiser of Aurora, President.

Dr. M. H. Hubrig of Elgin, Vice-President.

Dr. K. M. Manougian of Elgin, Secretary and Treasurer.

Dr. R. H. Graham of Aurora, is the retiring past president.

Dr. Chas. F. Read, Superintendent of the Elgin State Hospital, extended an invitation to the society to hold their April meeting at the Elgin State Hospital. This invitation was accepted.

DOUGLAS C. HURLEY, M. D.,
Elgin, Ill.

Marriages

EDWIN J. DE COSTA to Miss Mari Helene Bachrach, both of Chicago, January 5.

Personals

Dr. C. I. Reed gave a lecture on "Animal Experimentation" at the Springfield Y. M. C. A. on February 28.

Dr. Arthur J. Cramp gave a lecture on "Pink Pills and Panaceas" before the Lakeview Woman's Club on February 26.

Drs. Charles H. Phifer and Julius Hess presented a program on the Illinois Emergency Relief plan before the physicians, dentists and pharmacists of McHenry County at Crystal Lake on February 21.

Drs. Thomas P. Foley and Clarence L. Wheaton presented the scientific program for Franklin County Medical Society on February 28, subjects, "Common Sense Treatment of Heart Diseases" and "Lobar Pneumonia."

Dr. C. C. Maher addressed the Whiteside County Medical Society at Sterling, Illinois, on February 28.

Dr. John R. Wolfer gave a talk on "Some Problems in the Management of Gall Bladder and Biliary Tract Disease" before the DeWitt County Medical Society on February 25.

Drs. George K. Fenn and Guy M. Cushing presented the scientific program at the Warren County Medical Society, February 27, subjects "Angina Pectoris" and "Acute Perforating Gastric and Duodenal Ulcers."

Dr. James H. Hutton gave a lecture on "Practical Points in Endocrine Diagnosis and Treatment" before the Christian County Medical Society on February 27.

Dr. Morris Braude has been appointed attending physician to the Cook County Psychopathic Hospital.

Dr. Andrew C. Ivy, Chicago, spoke before the Rock Island County Medical Society, February 12, on "Applied Physiology of the Biliary Tract."

Dr. Charles F. Geschickter, Baltimore, addressed the Chicago Orthopedic Society, February 8, on "Tumors of the Bone."

At a meeting of the Chicago Laryngological and Otological Society, February 4, Drs. I. Davidsohn and John A. Cavanaugh discussed "Infectious Mononucleosis" and "Sphenoid on Parade," respectively.

At a meeting of the Will-Grundy County Medical Society, February 13, Dr. Jerome R. Head, Chicago, discussed "Surgical Treatment of Pulmonary Tuberculosis."

A symposium on the socialization of medicine was presented before the Eleventh Councilor District Medical Society, February 14; speakers were Drs. Rollo K. Packard, Chicago, Harold M. Camp, Monmouth, and John R. Neal, Springfield.

Speakers before the Chicago Surgical Society, February 1, included Drs. Alexander Brunschwig on "Large Doses of Calcium in Treatment of Metastases to Bone"; Hilger Perry Jenkins, "Delayed Pedicle Skin Grafts," and Harold C. Voris, "Surgery of the Frontal Lobes."

Dr. Wingate Todd, Henry Willson Payne professor of anatomy, Western Reserve University School of Medicine in Cleveland, addressed the Society of Sigma Xi, at the University of Chicago, February 20, on "A Study in Child Development."

Dr. Simon Flexner of the Rockefeller Institute for Medical Research, New York, will present the thirteenth Pasteur Lecture of the Institute of Medicine of Chicago at the Chicago Woman's Club, April 26. His subject will be "Virus Diseases of the Central Nervous System: Their Extent and Mode of Infection."

Dr. Gaius E. Harmon, recently appointed epidemiologist of the Chicago Board of Health, has been named professorial lecturer in epidemiology and vital statistics in the department of hygiene and bacteriology, in the Division of Biological Sciences, University of Chicago. He plans to give a special course in epidemiology during the spring quarter.

Dr. Don C. Sutton addressed the Mid-South Post Graduate Medical Assembly, February 12, on "Heart Disease Complicated by Pregnancy," February 13, "Arteriosclerosis." Also to address the Mid-South Anesthetists Association on "The Effects of Anesthesia on the Heart."

Before the Union County Medical Society, January 10, Dr. Liter of St. Louis spoke on angina pectoris of effort, its symptoms, etiology, pathology and treatment. February 14, Dr. Ralph A. Kinsella gave an address.

News Notes

—A symposium on transurethral resection constituted the program of the Chicago Urological Society, January 24; speakers were Drs. Edward W. White, Harry Culver, Herman L. Kretschmer and Irvin S. Koll.

—The Chicago Medical Society held a memorial meeting, January 27, in honor of its members who have died in the past year. In addition to a musical program, Dr. William Allen Pusey, discussed "Medicine the Last Fifty Years and the Next Fifty," and Frederick F. Shannon, pastor of the Central Church, "Some Doctors I Have Known."

—Dr. George W. Crile, Cleveland, addressed the Public Affairs Round Table of the Union League Club of Chicago, January 25, on "Medical Research, Health and Longevity." This lecture accompanied the first showing of the sound motion picture "That Man May Live," prepared by the American College of Surgeons.

—Dr. Royd R. Sayers of the U. S. Public Health Service, Washington, D. C., discussed "Silicosis as a Factor in Compensation and Personal Injury Cases" at a meeting, January 26, sponsored by the hospitality committee of the Chicago Bar Association. Members of the Chicago Medical Society and the Chicago Society of Industrial Medicine and Surgery were invited.

—The Iowa and Illinois Central District Medical Association held its quarterly meeting at the Blackhawk Hotel in Davenport, Iowa, January 11. The president, Dr. John C. Souders, Rock Island, gave a tribute to Dr. George L. Eyster, who practiced medicine in the community for fifty-five years and who now lives in Coral Gables, Fla. Other speakers were Drs. Merrill M. Benfer, Davenport, on "Consideration in the Treatment of Hypertrophied Prostate"; William H. Olmstead, St. Louis, "Vascular Diseases of the Extremities," and Louis G. Herrmann, Cincinnati, "Recent Advances in the Treatment of Obliterative Arterial Diseases of the Extremities." Several patients with arterial disease of the extremities were presented at this meeting.

—The use of the same syringe by several narcotic addicts was said to be the cause of an outbreak of malaria recently. Five deaths from the disease in the county hospital prompted a raid on the hotel where two of the victims lived. Two of the men arrested were found to be potential malaria carriers, having had the disease several years ago. They confessed to being part of a group of addicts that usually met together and used the same syringe.

—The Medical Credit Bureau was recently organized by the Peoria City Medical Society to furnish members with the financial rating of patients. Under the plan, "all worthy individuals will receive medical care as heretofore, but the person or persons having the means but not the desire to remunerate the physicians for services rendered will be asked to receive medical care and attention from the proper municipal, state or federal agencies created for that purpose."

—The Illinois Manufacturers' Association sponsored a technical discussion on occupational disease from the medical point of view at the Congress Hotel, January 31. The speakers included the following:

Dr. Leroy U. Gardner, director, Saranac Laboratory, Saranac Lake, N. Y., Pathology of Silicosis.

Donald E. Cummings, assistant director of the laboratory, Etiology, Clinical Findings and Prevention of Silicosis.

Homer L. Sampson, ScD., director, x-ray laboratory, Trudeau Sanatorium, Saranac Lake, Roentgen Findings.

A conference was held in the evening, at which speakers were:

F. Robertson Jones, New York, general manager, Association of Casualty and Surety Executives, Problems of Compensation in Occupational Diseases.

Peter J. Angsten, chairman, Illinois Industrial Commission, Occupational Diseases and the Industrial Commission.

Dr. Clarence O. Sappington, consulting industrial hygienist, Some Medicolegal Phases of Occupational Diseases.

—H. 96 proposes to impose a tax of 10 per cent. of the gross cash receipts from sales in Illinois on persons manufacturing patent and proprietary medicines in the state. H. 97 proposes to authorize the sexual sterilization of insane, feebleminded, mentally defective, idiot, imbecile or epileptic inmates of state institutions. H. 44 proposes to repeal the laws regulating the dis-

tribution and possession of narcotic drugs and to enact what apparently is the uniform narcotic drug act. H. 109 proposes to accord liens to physicians and hospitals treating persons injured through the neglicence of others, on all rights of actions, suits, claims or demands accruing to the injured persons because of their injuries.

—H. 191 proposes to require a male applicant for a license to wed to present a certificate from a licensed physician that the applicant is free from venereal disease.

—H. 236 proposes to accord to physicians, dentists, drugless practitioners, nurses and hospitals, treating persons injured through the negligence of others, liens on all rights of actions, claims, judgments, settlements or compromises accruing to the injured persons by reason of their injuries.

—The Ligue Internationale contre le Rhumatisme will hold its 5th International Congress at Lund (Sweden) in September 1936. Prof. Dr. S. Ingvar, Professor of Internal Medicine in the University at Lund has been elected Chairman, Prof. Dr. G. Kahlmeter, Stockholm, Secretary.

Further information to be had from the Secretary of the Ligue Int. c. 1. Rhumatime, Dr. J. van Breemen, Keizersgracht 489/491, Amsterdam.

—The opening of the Arthritis Clinic of Wesley Memorial Hospital is announced by Mr. Paul H. Fesler, the Hospital Superintendent. Facilities are provided for an exhaustive research and pathologic and clinical study of arthritis cases. It is also the purpose to institute medical and surgical treatment and to evaluate the present method of therapy. A seminar, open to all physicians interested in this subject, is held each Monday from ten to twelve. The conduct of this Clinic is under the direct supervision of Dr. Philip H. Kreuscher and Dr. Gilbert Marquardt.

Deaths

Lincoln Mock Bowman, Alton, Ill.; Rush Medical College, Chicago, 1886; member of the Illinois State Medical Society; aged 74; died, January 9, of heart disease following pneumonia.

William E. Buxton, West Salem, Ill.; Central College of Physicians and Surgeons, Indianapolis, 1881; member of the Illinois State Medical Society; president and formerly secretary of the Edwards County Medical Society; aged 76; died, January 2, of pneumonia.

Green Alexander Cain, Chicago; Meharry Medical College, Nashville, Tenn., 1893; aged 62; died recently, of intestinal obstruction.

Martin Luther Gettinger, Palestine, Ill.; American Medical College, St. Louis, 1880; aged 76; died, December 20, 1934, in Santa Fe, N. M., of pneumonia.

George Benson Kelso, Bloomington, Ill.; University of Michigan Homeopathic Medical School, Ann Arbor, 1886; member of the Illinois State Medical Society; aged 74; died, January 27, in St. Petersburg, Fla., of coronary thrombosis.

Frank Busby Parker, Ursa, Ill.; Keokuk (Iowa) Medical College, 1893; aged 63; died, December 10, 1934, in St. Mary Hospital, Quincy, of encephalitis.

Maurice R. Perlstein, Chicago; Chicago College of Medicine and Surgery, 1914; aged 43; died, January 21, of hydronephrosis and myocarditis.

Henry John Plenz, Chicago; Northwestern University Medical School, Chicago, 1910; aged 46; died, January 14, of organic heart disease.

Robert Andrew Poynton, Chicago; Niagara University Medical Department, Buffalo, 1891; on the associate staff of the South Chicago Hospital; aged 69; died, January 22, of uremia, cerebal arteriosclerosis and subacute coronary thrombosis.

Dennis P. Russell, Chicago; Rush Medical College, Chicago; 1890; aged 74; died, January 15, of cirrhosis of the liver.

William Thompson, Morrisonville, Ill.; Missouri Medical College, St. Louis, 1881; aged 76; died recently, of lyphatic leukemia.

Augustus E. Venn, Chicago; University of Pennsylvania School of Medicine, Philadelphia, 1893; aged 69; died, January 7, in the Alexian Brothers' Hospital, of chronic myocarditis following operation for intestinal obstruction.

Lawrence Wells Whitmer, Chicago; College of Physicians and Surgeons of Chicago, 1892; aged 73; formerly on the staff of the Illinois Masonic Hospital, where he died, January 2, of chronic myocarditis and hypostatic pneumonia following an operation for gallstones.

Frederick Wrede, Chicago; Miami Medical College, Cincinnati, 1880; also a druggist; aged 84; died, December 30, 1934, of chronic myocarditis and arteriosclerosis.

Henry Lee Yoder, Morton, Ill.; Missouri Medical College, St. Louis, 1899; a Fellow A. M. A.; aged 62; died, November 21, 1934, in the John C. Proctor Hospital, Peoria, of prostatic obstruction and pyonephrosis.

Charles Benjamin Younger, Chicago; Northwestern University Medical School, Chicago, 1902; a Fellow, A. M. A.; assistant professor of otolaryngology at his alma mater; fellow of the American College of Surgeons; past president of the Chicago Laryngological Society; aged 59; on the staff of the Wesley Memorial Hospital, where he died, January 11, of coronary thrombosis.

March, 1933

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